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FOREIGN BODIES IN THE EYE.

BY JOHN F. CURRAN, M.D., WORCESTER, MASS.

IN these days, when every physician is looking for something unusual in his favorite medical journal, one feels like making an apology for writing an article on the commonplace subject of foreign bodies in the eye. But, after treating several hundred cases in factory and private practice, I am convinced that my experience will be of assistance to brother practitioners who have comparatively few cases of this form of injury.

Since the establishment of factory hospitals it is the industrial surgeon who treats the majority of cases of this kind, and it is from his point of view that I present the subject.

At the Norton Company during the past year we treated 1300 cases of injury to the eye. Of these, 90% were directly attributable to foreign bodies. In fact, they constituted one-third of the entire number of cases treated at our hospital, and were second only, in frequency of occurrence, to lacerations of the upper extremities.

A foreign body in the eye probably causes more discomfort than all the other minor accidents combined, especially if it is situated beneath the upper eyelid, or embedded in the cornea.

A man with a foreign body in his eye will often neglect it until the pain causes him to suspend work. He then seeks aid from a fellow laborer, or perhaps from his family physician, who very often is not skilled in this particular branch of surgery. Under our present system, we have a minimum of lost time because the men are forbidden to treat each other's eyes, and because every man knows he is to report at the shop hospital for every accident, however trivial. No injured man is allowed to leave the factory without a permit from the hospital authorities.

DIAGNOSIS.

It is, of course, necessary first to determine the presence of a foreign body. The patient usually comes to us, saying that something entered his eye and is causing him pain. Very often no foreign body can be found because the increased flow of lachrymal fluid has carried it off, and the patient is in pain because of the injury to the sensitive nerve filaments in the conjunctiva. We are often misled by a patient saying, "It is under the upper lid." This is because the conjunctiva is most sensitive in that region. Sometimes for the same reason a patient will complain of this pain after the foreign body has been removed. Not infrequently, in spite of the patient's story, I have found the foreign body in the cornea and often on a level lower than the palpebral fissure.

In private practice I always ask the patient if an attempt has been made to remove the foreign body. Sometimes the particle has been removed by a fellow workman who has some skill in this practice. Many physicians remove the foreign body successfully, but, because of the

abrasion of the corneal tissue and the injury to the sensitive anterior ciliary nerve filaments, the patient still suffers greatly, and he consults another doctor. If the pain is severe, an abraded cornea is the usual condition we find upon examining the eye.

Our method of examining the eye is this: First, we inspect the lower conjunctival sac. This can be done by simply pulling down the lower lid and telling the patient to look up, thus exposing the whole conjunctival surface. Then we take the upper lid. Here it is necessary to evert the lid in order to expose the whole conjunctival surface. The ease with which this can be done depends largely upon the experience and consequent dexterity of the surgeon. To do this easily, have the patient look down, grasp the lashes of the upper lid, place an applicator at the base of the tarsal cartilage and evert lid, thus exposing the entire fornix.

If no foreign body can be seen in either conjunctival sac, we then examine the cornea with the naked eye. If necessary, we use a watchmaker's glass, or if this is not successful, we illuminate the eye obliquely through a condensor. Large foreign bodies can almost always be seen with the naked eye, but small ones require a prolonged search with the glass and condensed light for aid.

If we anticipate difficulty in locating the foreign body, experience has taught us that we can make a quicker and more thorough examination by first putting the eye at rest by instilling two drops of a 4% solution of cocaine.

There are two conditions which may confuse us: first, pigment spots in the iris; and, second, pigment stains (improperly called "rust spots") on the cornea, where the foreign body has lodged.

Pigment spots on the iris can be differentiated from foreign bodies on the cornea by illuminating the cornea at different angles, thus showing the pigment spot to be at a different level than the corneal surface.

If the foreign body becomes imbedded on the cornea it always leaves a pigment stain or so-called "rust spot." It is often extremely difficult to distinguish between a foreign body on the cornea and a rust spot; even the specialist cannot always do so. The stain is usually a brownish-black in color and much denser at the periphery than in the center, where sometimes clear corneal tissue can be seen. The rust spot in these cases resembles a ring. My experience has taught me to leave the "rust spot" for the time being, having successfully removed the particle. In the course of forty-eight hours the spot in its entirety (it resembles a small scale) can be removed.

TREATMENT.

Here, and in industrial surgery in general, prophylaxis is of the utmost importance.

PROPHYLAXIS.

Many of the departments in our factory are dusty, although we strive for the best possible ventilation. In the presence of air currents foreign bodies enter the eye very frequently. Many of the men working on machines for shaping and truing grinding wheels suffer from this accident, in spite of the fact that they wear goggles especially devised to prevent it, and that the machines are equipped with suction devices.

In the Norton Grinding Company, where grinding machinery is made, this accident seems most frequent in the chipping and snagging departments. Here foreign bodies are

apt to enter the eye with considerable force, and thus become imbedded. Since the cornea presents the largest undivided and exposed portion of the eye, most of the particles are found to lodge there. It is not unusual to find foreign bodies imbedded in the sclera of men working in these departments.

Our hospital records show that in 50% of the cases in which the foreign body is imbedded it is located on the cornea, in 5% on the sclera, and in the remaining 45% it is found loose in the conjunctival sac.

Fortunately we have never had a case in which the foreign body perforated the cornea or sclera. We have treated several such cases, however, coming from other factories which do not have a medical department.

CURATIVE TREATMENT.

Removal of foreign bodies lying loose in the conjunctival sac can usually be accomplished by means of a cotton-wound applicator. Two drops of argyrol, 20%, are instilled and the patient discharged.

Imbedded foreign bodies, whether they are situated on the cornea or sclera, always necessitate the use of an anesthetic. It is our custom

to use two drops of a 4% solution of cocaine in a boric acid solution.

Cocainae Hydrochloridi	xvi
Sol. Acidi Borici 2%	℥iv

The foreign body then can be removed without much difficulty in the majority of cases, with a corneal spud. If a large foreign body is deeply imbedded it is best to use a spear-headed spud.

Technic for removal of large foreign body imbedded in cornea: Eye cocained, lids held apart; foreign body located with aid of glass if necessary. Point of cornea spud introduced as nearly as possible between the foreign body and the corneal tissue. The foreign body is then elevated and removed with a swab, in case it slips from tip of spud, as it does very frequently.

If a small foreign body is deeply imbedded it is best to use a Graeffe cataract knife. We feel in these cases that the cornea will be more or less injured, but that a small laceration is to be preferred to a large abrasion (which would result from the use of a spud).

After the removal of a foreign body is accomplished routinely, we instill two drops of a 20% solution of argyrol because of its antiseptic and astringent properties.

If there is much conjunctivitis present and the man is suffering considerable pain, the following is frequently used:

Cocainae Hydrochloridi	gr. i
Glyceriti Borici	℥i
Aquae Camphorae	℥ *ad* ℥i

Sig. One or two drops every hour or two.

The patient is advised to use hot compresses at home.

When a foreign body which was imbedded is removed, we always instill two drops of a 1% solution of atropine to put the eye at rest. When the eye is relaxed the corneal wound heals more rapidly and the patient is far more comfortable. We supply the injured men with colored goggles in these cases, and they are instructed to apply hot compresses at home. Seeing our cases promptly, as we do in nearly every instance, we seldom have men lose time, even when the injury is extensive.

GOGGLES.

Through the coöperation of our Safety Engineering Department, we feel that the number of these accidents has been reduced to a minimum. Our success in this respect we attribute largely to the goggles we are now using throughout the factory.

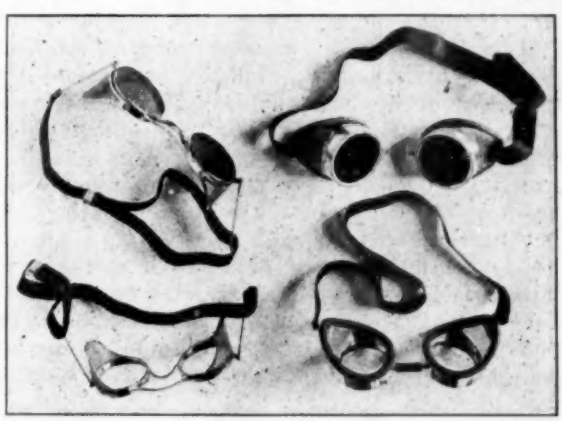
Probably the most successful means of eye protection in industry is goggles. These should always be worn in work involving grinding and chipping, and where sparks or dust result from the operation. Of course a different type of goggles is needed in grinding and chipping from that needed where a fine dust is involved because of the difference in the flying particles.

GRINDING WHEEL STAND, BENCH TYPE.

Properly equipped with protection hoods. Note goggles on operator.

GRINDING GOGGLES.

They have these advantages: an adjustable elastic head band, light weight nickel-plated frame, solidly constructed lens frames with a ridge inside the glass to prevent its caving in, and a reinforced bridge. They come in six assorted sizes. They may be had with green lenses of various shades, and thus do away with the injurious integral red and ultra-violet rays common in steel works and around blast furnaces, where there is danger of hot metal spattering.



DUST PROOF GOGGLES.

They were specially designed for us. They have an elastic head band, frames of aluminum, and rubber padding around the lens frames.

The two lens frames are connected by a piece of chain about an inch long, and allow of adjustment by merely turning the optical center. The glasses are the same as in the grinding goggles. The rubber padding (which lessens the effect of a blow on the goggles) may be replaced by leather if the goggles are to be worn where acid fumes would affect rubber.

The following incident is an example of the effectiveness of these goggles.

A man was working in the truing room, siding a ten-inch wheel. He evidently did not have the wheel in the machine tight enough, for it flew out, and would have struck the operator squarely in the eye had he not been wearing goggles. The force of the blow may be judged from the accompanying photograph. The glass was broken and one lens frame badly bent, yet the man received nothing but a bruise, due to the blow being transmitted through the frame to his cheek. The effects of the blow would have been more severe had it not been for the rubber padding. It was not necessary for this man even to report to the hospital.

THE CHINESE BARBER AND HIS USE OF AURAL INSTRUMENTS.*

BY A. M. DUNLAP, M.D., SHANGHAI, CHINA.

I HAVE been asked by your secretary to tell you something about the common practice of treating ears among the old-style Chinese barbers. I say "old-style," as the Revolution of 1911, with the nation-wide cutting off of that Manchu invention—the queue—has created a new class of modern barbers. These men are so engaged with the ordinary undertakings which belong to the barber-shop, as you and I know it, that either they are unable or have not the desire to carry on the practices of the old-time barber.

I do not mean to say that the barber of old China has passed, with his practices, which remind us of those of Occidental barbers in ancient times. Even in as enlightened a city as Shanghai, they are constantly to be seen on the street corners.

There are still many in China who, if they do not actually wear a queue, have the hair bobbed long and the forehead shaved high. These doubting souls are prepared, while adhering to the new order of things, to revert to the old, in the event of a political change, by bringing from its hiding-place the once-admired queue, and fixing it in its former position. As the present government increases in power, the hiding-places will be forgotten and the old barber will either find himself cast aside, or be compelled to take up the newer methods.

Today, these old men can be seen with their wash-stands, basins, and a single towel, which does for everybody, on the shady side of the street in summer and on the sunny side in winter. The customer seats himself on a hard stool and the barber proceeds to lather the front part of his scalp, and to shave it, down to the ears. It is unfortunate that this style of wearing the hair cannot be introduced into Western countries, thus making high foreheads the rule. The scalp finished, the face is shaved, or rather passed over with the razor, as the growth on the average Chinese face is exceedingly scanty. I have sometimes thought that the queue may have had something to do with this sparsity of growth, as the Japanese, of a kindred race, are able to grow fair moustaches and beards. It will be interesting to see what several queueless generations will do to increase this facial growth.

But to return to the barber—his shaving is rarely completed without passing the razor over the entire cheek and nose. Occasionally he may shave as near the inner canthus of each eye as he thinks he may safely go. In watching them, it has seemed to me that this last act was more for the pleasurable sensation it gave the customer, than for the removal of hair. It is just possible, too, that the barber feels he has not earned his fee of a few coppers, unless he does his part to make it "a man's job."

Just as our barbers ask if we will have a shampoo, the Chinese wishes to know if his customer will have his ears shaved. I have been unable to find out how and why this practice started, but apparently it is very old, since it is followed by practically all the Oriental races. It is likely that, many years ago, the barber became the logical man to remove wax and detritus of all sorts from the ears, and as he became more adept at it, he added the preventive measure, as he considered it,—the shaving and cleaning of the ears of his customers. This practice could not have survived, however, had it been at all disagreeable. I have questioned many Chinese as to why they have it done, and invariably they give the reason that they like the sensation.

The barber understands how to pull the ear upward and backward in order to straighten the canal. He uses, of course, no head mirror, but if he is in a room, he will stand so that the light from the window passes over his shoulder. His first manipulation consists in shaving all the hairs he can see, in the external canal, by using a long, narrow knife. Then, by means of long forceps, and curved needles, he picks away the

* Read before the New England Otological and Laryngological Society, January 23, 1917.

particles of hair and epidermis which do not come with the knife. A feather ball at the end of a slender piece of bamboo is then twirled in the ear, to remove the finer particles.

I have taken occasion to examine the ear of a man immediately after his ear had been shaved. All the hairs and the superficial layers of epidermis had been removed, and while there was no blood to be seen on the outside of the ear, there were many minute hemorrhages, where the knife had gone too deep. The epidermis, deep in the canal where the razor had stopped, was rough and ragged.

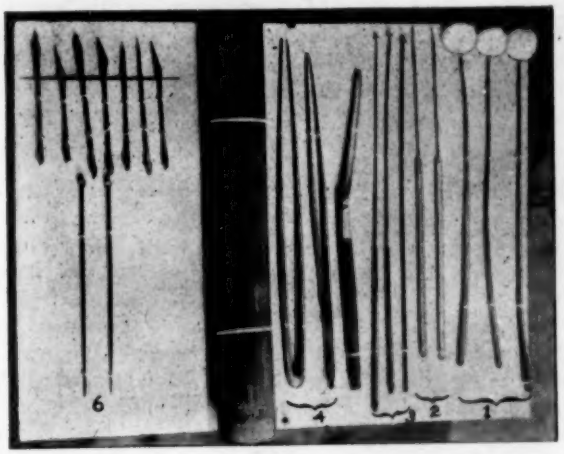
Aside from the accident of cutting away too much, the ear drum may be punctured with the long needle. Many a patient in the clinic has volunteered the information that the barber gave him pain at his last visit, since which time he had had a running ear. It is conceivable that a needle, which is never sterilized, might cause an infection if thrust through the ear drum. Examination of such cases may show an irregular perforation, which might come from pulling the point of the needle sidewise; or a pin-point perforation, resulting from a direct thrust.

Perhaps the most common sequel of this pernicious practice is the growth in the external canal of soft granulations, which later become quite firm. These condylomata come, undoubtedly, as a result of the repeated irritation with the knife, and the accompanying infection. A daily clinic of fifty will usually produce four or five patients with their external auditory canals either partly or totally blocked with these masses. Many such patients have absolutely no middle ear complications.

Furunculosis and diffused inflammation of the external meatus are extremely common, as a direct result of the ministrations of the Chinese barber, particularly among children and young adults.

Muscular treatment forms another important function of the barber. As I have watched them. I have thought this might well have been the origin of osteopathy. With the barber's foot raised to the stool beside the customer, first one arm and then the other is laid over his knee, pulled, rolled, flexed, and massaged. This done, the forehead may be attacked, and the skin stretched and pulled. The skill of the barber is evident finally, in his ability to massage the spinal column, giving to his thumps a rhythm similar to that of clod-hopping. As the clod-hopper gets his effects by dropping his feet in different positions, so the barber gets his, by working with the fist closed, partly open, or with the full-spread palm.

The barber is not to be blamed for all the injuries to the ear which result from manipulations. The duck-down ear-dusters, before mentioned, are sold broadcast by street hawkers for use "in the home." The ear-spoon forms a part of every Chinese married woman's head-dress. It is made of jade, ivory, gold, silver, or brass, according to her station in life, and used for every purpose, from ear-cleaning to the picking of the teeth.



(1) Duck-down ear twirlers, (2) bamboo scoops, (3) bamboo scoops (fancy kind), (4) razor, (5) forceps, (6) ear cleaners (also used as hair-pins), (7) sharp pointed blades for use in acupuncture, (8) bamboo tube, in which all instruments are kept.

At odd moments the barber is a doctor for persons having fever, which, in the minds of the less enlightened, means the presence of an evil spirit in the body. For the purpose of "letting out" fevers the barber uses a sharp needle, or a knife-needle, with which he punctures the forearm or front of the chest in numerous places. A fair amount of blood is drawn in this way. The leech is also used for the same purpose.

No one can live in China long, without seeing individuals here and there with a curious marking on the throat. The same effect could be obtained if one were to paint parallel dark-red lines, a half-inch wide, up and down the front part of the neck. The barber has produced this condition as still another treatment for fever. It is really internal bleeding into the subcutaneous tissues, caused by picking up the skin between the first and second fingers, pinching and stretching it, and allowing it to snap back into place. The same result may be obtained by using an old copper cash piece and passing it rapidly over the skin until the above effect is produced. There is no external bleeding by this method. Another favorite place for this treatment is the back. Contrary to popular opinion, the Chinese have as much pain during these operations as any of us would have. They bear it because they have a stoic faith that it will rid them of their trouble.

Incidentally, I might say that the rule of every Chinese medicine-man or barber-doctor is "pay as you enter." Treatment is given much more carefully, perhaps, if the fee is on the table before it starts. Should a patient leave without depositing his fee, he probably would forget to pay ever afterward. This custom of paying at the time of treatment is really preferred by the Chinese and would not be a bad one to adopt in the West.

For all his misguided attempts, or his contributions to the common welfare, the barber is classed among the lowest, if not the lowest, in the social scale of the Chinese people.

RESULTS OF FURTHER STUDY IN LEG ROTATION.

BY C. L. LOWMAN, M.D., LOS ANGELES.

IN continuing the work and observations on faulty weight-bearing in reference to the overstretching and weakening of the external rotators of the thigh, I wish to refer you to the previous articles. The effects on the feet from weight-bearing in inward rotation is considered in the first paper published in the BOSTON MEDICAL AND SURGICAL JOURNAL, January 18, 1912. Faulty relations in skeletal alignment between the leg and body, produced by relaxation of certain groups of leg and foot structures, are taken up in the second paper, entitled "Relation of Foot and Leg Muscles to the Statics of the Body," published in the BOSTON MEDICAL AND SURGICAL JOURNAL, February 5, 1914.

For the past five or six years, particularly, I have been intensely interested in the study of posture in children, in an effort to correct relaxed weak feet which had dropped into valgus, or to raise those that from babyhood had never been anywhere else. I very soon attempted to get away from the use of metal on children in the treatment of these conditions. It is a physiological law that muscles grow strong by being used. When splints prevent their working, as arch supports do, in foot conditions, then weakness is apt to follow unless carefully prescribed gymnastics are carried out to offset this vicious effect.

A very high percentage of the posturally relaxed children have faulty foot positions, either congenital or acquired, but usually the latter. They also usually have one or more groups of weakened or overstretched ligaments or muscles, caused by a too rapid growth or increase in body weight, plus a faulty gravity line of the leg, or due to weakness more pathological, as in malnutrition.

The treatment of the condition must not be confined to the feet; they are only the foundation. To expect the weakened muscles to hold the foot, even assisted by shoes or arch supports, and thereby control faults in the upper leg and body, is asking a great deal. The force necessary to control a long lever with a short one is so great that we should not consider the foot end of the problem alone. When the thigh droops into inward rotation, from whatever the cause, primarily or secondarily, the weight falls through wrong lines onto the lower leg and foot structures. The control or prevention of this faulty thrust, which increases in direct relation to the degree of deviation, should be the aim in any line of treatment. Torsion deformities in the leg bones and mal-alignment of the joints are induced when this faulty thrust is allowed to go uncontrolled.

To be permanently effective and of positive and constructive value in the physical life of the child, the treatment should be broad and comprehensive. Consequently, the body balance and a consideration of its relation to foot and leg postures is necessary. All children should be stripped for examination, although they have been referred only for weak ankles, flat-feet, knock-knees, or bow legs. Then the points of mal-alignment in the back, pelvis and thighs will stand out and the parents can be shown their effect on the lower segment.

Since the body weight falls onto the legs through the pelvis, and the thigh movements are controlled almost wholly by muscles fastened to and near it, in order to control the thighs we must control the pelvis and back. My first experiment in controlling thigh rotation was in a girl of ten with very relaxed, flat feet, for which she had been treated by others for two years. She showed marked pronation with prominence of the inner femoral condyles; inward rotation of the thighs; hollow back, and prominent abdomen. She was made to stand on the outer borders of her feet and a three-inch strip of adhesive was passed over her sacrum and buttocks down across the thighs spirally to the inner condyles. She was then told to let her feet down and found that she could not, but was held in varus and her lumbar curve was flattened. She was allowed to wear this without other support for the feet for a week. She then reported that it had held her about three days before slipping.

Appreciating the fact that the soft, sensitive skin over the inner aspect of the thigh could not stand this pull very long, I thought of connecting this control to the upper end of the regular spiral foot strapping ordinarily used for pronation. Thus the thrust or force of the body weight falling on the sling passing under the relaxing arch, reverted back into the pelvis, is used to control the pelvic position.

Not being able to keep a patient strapped with adhesive I had an ordinary pelvic girdle made, snugly fitted above the crest and sacrum. Two straps, one and a half inches wide, of folded coutille or strong muslin, were sewed to this girdle. These passed from the midline posteriorly downward, outward, and forward, crossing the thigh anteriorly to the inside of the knee, over the inner condyle, behind the bend of the knee, and outward over the outer aspect of the calf, ending in a buckle at about the junction of the middle and lower thirds of the leg. Smaller straps of the same material, broader at their distal extremity and tapered at the top, according to the width of the buckle, are tacked in the shoes just back of the base of the fifth metatarsal. These pass inward under the front of the os calcis and scaphoid, through a slot in the

Fig. 1. Fig. 2. Fig. 3.

stocking, upward and outward to the buckle on the leg strap. The patient stands on the outer border of the feet while these straps are buckled. The weight borne on this sling pulls the leg straps taut, makes outward pressure at the knee, and pulls down the girdle. See Figures Nos. 1, 2 and 3.

This first child wore the apparatus for ten months until it was outgrown. Returning six or eight months later she was found to have excellent posture throughout and straight foot position. The child's mother, who made the outfit, informed me that she made one also for herself and since wearing it the pain had stopped in her bunions, showing that even in the adult the weight could be shifted to the outer border of the foot by this means. Since this time I have used this method on thirty or forty cases and demonstrated its usefulness, at least to my own satisfaction, but feel it might be modified or improved to advantage. On patients who are wearing a spine brace these straps may be fastened to the brace instead of to the girdle. See Figures Nos. 4, 5 and 6.

In cases of flat back the straps can be fastened to the girdle higher up and pass across the crest far enough forward to increase the pelvic tilt and correct the flattening. In older children, girls especially, with relaxed backs and round shoulders, a proper corset or corset waist with shoulder straps can also be used in conjunction with the pelvic attachment. Care should be taken, however, that the girdle does not slip down so that any pull is transmitted to the shoulder girdle. This girdle is lightly boned behind; wide enough to be comfortable and to give good abdominal support. It may be high enough in the extremely lordotic type, to bridge over the lumbar area to the lower dorsal and carry stiffer steels instead of bones.

In spiral cases with genu recurvatum or in cases that toe out more, to slacken to the pull on the straps, the leg straps should be brought

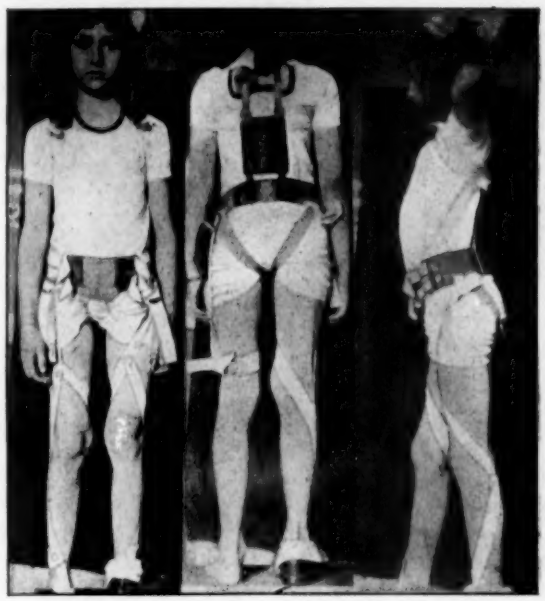


Fig. 4. Fig. 5. Fig. 6.

down behind the thigh, passing back of the knee to the buckle on the inner aspect of the leg.

The shoe is usually corrected by having one-eighth inch raise on the inner border of the heel and one-eighth inch raise on the outer border of the sole under the heads of the fourth and fifth metatarsals, but not extending to the toe.

The children are then given local and general corrective gymnastics, games being used for the smaller ones. Especial attention is given to the external rotators by using the foot fixation board, as described in the first paper. When a stronger effect is desired, or when from any cause it is best not to have the patient exercise in the standing position, the following exercise may be substituted: Patient lying prone on table with feet projecting beyond; thighs relaxed and rotated inward. Assistant grasps heels, resisting, while the patient strongly rotates the thighs outward until the heels touch. Patients are not allowed to roller skate or to walk in their bare feet unless they walk on the outer border.

All exercises for the postural conditions should be given as much as possible in the corrected or overcorrected position, in order that the shortened groups may be stretched, and weakened groups shortened and brought back into balance.

Both for use at the gymnasium and at home balance board exercises on a special board are given (see Figure No. 7). To make this apparatus, have two boards, one inch thick, two and a half to four inches wide, and ten to sixteen feet long, according to the yard or house room, covered with rubber matting. These are supported or nailed to three or four triangular blocks at whatever angle is desired. (I usually have them tell the carpenter to make it one-quarter pitch like the ridgepole of a house.) A

FIG. 7.

crack one inch wide is left between the boards. When the child has learned to walk this board in good form and with correct body poise, a sand bag is placed on the head; he then has to look farther ahead and the wide crack is an advantage for orientation. If desired, weights in one or both hands can be added and nearly all the other balance-board exercises can be given. Tennis shoes may be worn, but only while doing this exercise or wearing the leg harness.

After they have mastered various exercises with the board on the ground, the apparatus is raised from six to twelve inches. Every two to four weeks an additional six-inch raise is made until the board is two feet or so from the ground. This greatly increases the difficulty and necessitates greater skill and form, increases the interest, and makes greater demand on the guy wire muscles of the legs.

On this apparatus the body weight stretches the peronei, and the relaxed thigh rotators above and the tibials below must take up the slack to maintain the balance. I insist that the parents do not let the child play on this apparatus but use it definitely and deliberately at a regular time every day; and use it as a game or a reward of merit.

The photographs show both the leg harness and the apparatus.

CARCINOMA OF THE UMBILICUS.

BY M. G. WOHL, M.D., OMAHA.

[From Pathological Department, Nicholas Senn Hospital, Omaha, Nebraska.]

A REVIEW of the literature of tumors of the umbilicus convinces one as to the infrequency of their occurrence. Malignant tumors are exceptionally rare. Cullen (The Umbilicus and Its Diseases, Saunders Co., 1916) has been able to collect from the literature only twenty-two authentic cases of primary carcinoma, both of the glandular type, originating from remnants of the omphalomesenteric duct, and of the squamous character, starting in the skin over the umbilical scar.

Of the secondary carcinoma, there are only fifty published cases, and out of these only five cases were secondary to carcinoma of the intestines. (Of the remaining cases, twenty-seven were secondary to carcinoma of the stomach, five to carcinoma of the gall-bladder, nine to carcinoma of the ovary, and four to carcinoma of the uterus.)

The following case of carcinoma of the umbilicus, secondary to the intestines, came under my study at the Nicholas Senn Hospital, and because of its rarity, I believe its publication is warranted.

Mrs. C., aged 62. Nothing in her family history that has any bearing upon her present condition.

Past History. Never sick so as to be confined to bed.

Present Illness. Last summer she noticed a small, hard mass to the right of the umbilicus. No pain nor tenderness. The mass gradually increased in size until it reached the present size of an adult's fist. As far as she remembers, she has never had any injury to the umbilicus. For several years she has been constipated. She complains of a good deal of belching; never vomited. Appetite good, but she lost twenty pounds in weight last winter. Upon examination, there was an elevation, irregularly round and nodular, about four inches in diameter, with unbroken skin, and the umbilicus in its center. It was hard to the feel. Patient was admitted to the Nicholas Senn Hospital, March 25, 1916. Operated upon by Dr. A. P. Condon. A lipectomy incision was made surrounding the umbilical mass. Mass found to be the size of two fists. It had pushed parietal peritoneum towards abdomen and had entirely displaced the recti muscles in the region of the tumor. It was firmly adherent to the transverse colon, so that about eight inches of transverse colon were removed with mass and ileocolostomy done. A mass the size of a duck's egg was implanted upon the sigmoid and had the appearance of cauliflower growth. It was easily removed and did not invade the walls. Patient died of peritonitis.

Pathological Report. The tumor mass measured 15 centimeters by 10 centimeters by 6 centimeters. It was covered with skin. The umbilicus was retracted. Upon section the tumor presented the appearance of a cyst, the apparent walls of which were beset with solid masses of tumor tissue. Besides the tumor nodules there was clotted blood. The cyst-like appearance of the new growth was probably due to the breaking down of tissue, since no true cystic walls could be made out. Coils of large intestine were attached to the tumor. (Figs. 1, 2.)

Microscopic examination of the sections taken from different parts of the tumor revealed the typical picture of glandular carcinoma. In places the carcinomatous tissue was arranged in solid cords. The cells lining the glandular and solid structures were of the cylindrical type, with deep-staining nuclei. The stroma of the tumor consisted of connective tissue which was well vascularized. The connective tissue stroma just beneath the squamous epithelium of skin contained melanotic pigment. However, the skin was intact. (Figs. 3, 4.)

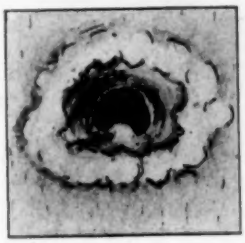


Fig. 1. External appearance of carcinomatous umbilicus.

Fig. 2. Appearance of inner surface of carcinomatous umbilicus after removal.

Diagnosis. Adeno-carcinoma.

We agree with Dr. Cullen (to whom we wish to express our thanks for the examination of slides of this case) that the tumor is secondary to carcinoma of the intestines. This view is supported by the fact that the histologic structure of the tumor had all the earmarks of adeno-carcinoma of the intestines. Also, as we stated above, it was attached to the transverse colon, and a nodule the size of a duck's egg was on the sigmoid. The histologic picture of this tumor tissue was identical with that of the umbilical tumor, excepting its more cystic nature (Fig. 5).

Symptoms and Diagnosis. From the few cases reported in the literature it would be impossible to build up a clinical picture from which a diagnosis could be made. A point of considerable practical importance that is well brought out in our case, is the fact that an umbilical tumor developed long before the primary intestinal carcinoma gave any signs indicating its presence. This seems to be the rule in carcinoma of the umbilicus. Therefore, any lump that develops at the umbilicus should be seriously considered, and the probability of its being secondary to an abdominal tumor borne in mind.

I wish to acknowledge my indebtedness to Dr. F. Kuegle for his aid in the preparation of the illustrations.

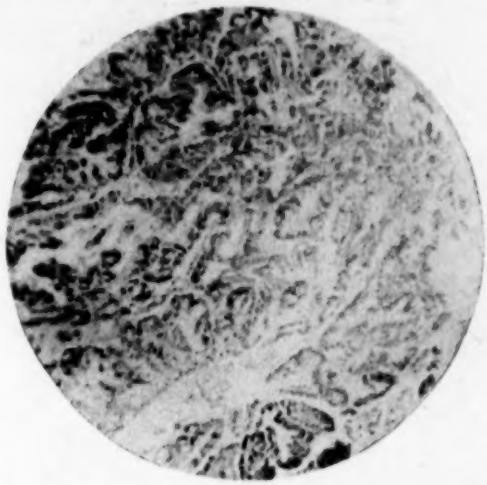


Fig. 3. Photomicrograph (low power) showing the glandular character of the tumor. Lower field shows nests of cancer cells.

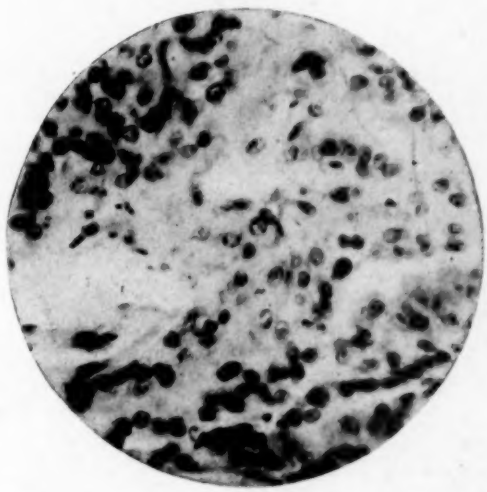


Fig. 4. Photomicrograph (high power) of adeno-carcinoma of umbilicus.

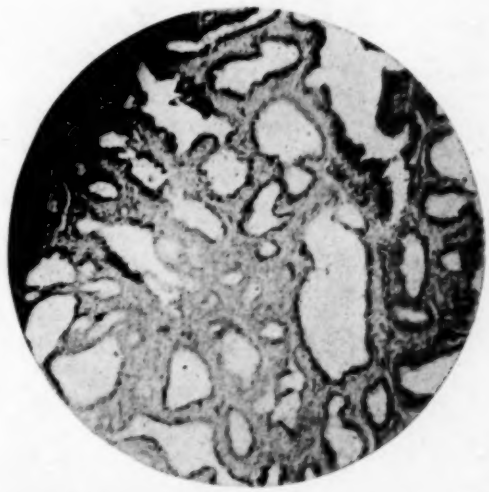


Fig. 5. Photomicrograph (low power) of section from nodule on sigmoid. Note the glandular nature of tissue.

TABLE INDICATING THE CASES OF CARCINOMA OF THE UMBILICUS SECONDARY TO THE INTESTINES.*

	Reported by	Sex	Age	Location of Primary Tumor	Condition of Umbilical Region	Remarks
1.	Lage: Schmidt's Jahrbuch, 1847, lv, 295	———	—	Large bowel	Umbilicus felt hard. Brownish red growth.	Patient died of carcinoma of the large bowel.
2.	Lebert: Bull. Soc. Anat. de Paris (Reported by Chuquet), Du Carcinome generalisé de peritoine. Paris, 1879, No. 548	Female	54	Rectum	Hard tumor at umbilicus	Patient complained of pain and colic at umbilicus with digestive disturbances. Autopsy revealed carcinoma of rectum.
3.	Villar: Tumeurs de l'ombilic. Thèse de Paris, 1886	———	53	Transverse colon	Reddish nodular tumor, slightly movable and ulcerated	Tumor of umbilicus developed during course of clinically diagnosed carcinoma of transverse colon. Autopsy proved similarity of umbilical and primary growth.
4.	Barker: Lancet, London, July 19, 1913	Male	37	Transverse colon	Discharging sinus. Induration extending for several inches in left rectus muscle.	Occasional pain at umbilicus for several months. Swelling at umbilicus which was opened and it healed, then it burst and kept on discharging.
5.	Pernice: Die Nabel Geschwulste, Halle, 1892	Female	52	Large intestine	Nodules in region of umbilicus	Burning pain, worse on pressure. Abdomen distended with fluid. Exploratory operation revealed general carcinomatosis.
6.	Wohl: Present issue	Female	60	Large bowel	Protruding immovable mass at umbilicus	A lump in the umbilical region developed for last 6 months. No pain. Patient died of peritonitis.

* Most of the data for this table was taken from the admirable work of Cullen, "The Umbilicus and Its Diseases," Saunders Co., 1916.

Clinical Department.

RADIUM TREATMENT OF BLADDER AND PROSTATIC CARCINOMA.*

BY B. S. BARRINGER, M.D., NEW YORK CITY.

[From the Memorial Hospital]

THIS report is based upon twenty-five cases of carcinoma of the bladder and thirty cases of carcinoma of the prostate treated by radium since October, 1915.

BLADDER CARCINOMA.

In making a diagnosis of carcinoma of the bladder in these cases more stress has been placed upon the clinical findings than upon the microscopic examination. Such clinical findings making for malignancy are, in order of their importance:

1. Induration revealed by touch (rectal or vaginal) or by cystoscopy. When a tumor feels hard, one is much more certain of one's findings than when one sees (or thinks one sees), by means of the cystoscope, an induration of the base of the tumor. In the latter case the personal equation enters much more than in the former.

2. Slough. Only malignant tumors slough. Such slough appears as grayish or whitish areas in the tumor mass. Here again one may err, and I have often been surprised how one's idea of a bladder tumor changes with subsequent cystoscopies. In difficult cases a number of cystoscopies may be necessary accurately to determine both the extent and the appearance of the tumor.

3. Reaction to fulguration. Keyes and Geraghty have called attention to this feature. Benign tumors are quickly burned off by fulguration. Malignant tumors react stubbornly or not at all.

4. Age. The older the patient the more likelihood of carcinoma.

5. Multiplicity and size of tumor. So-called benign papillomata are more apt to be multiple than carcinomata. The size of tumor rather speaks for difficulties in its removal than for malignancy.

* Read before the New England Branch of the American Urological Association, Boston, March 13, 1917.

The microscopical examination in twelve of the twenty-five cases has shown carcinoma. According to the microscopical examination, these twelve are classified either as papillary or as diffuse carcinoma.

APPLICATION OF RADIUM IN BLADDER CARCINOMA.

The technic of the application of the radium is: two capsules of screened radium (0.6 mm. of silver and 1.5 mm. of rubber) from 50 to 100 mc. are placed in the bladder through the sheath of the cystoscope and allowed to remain there 6 to 8 hours. As 90% of bladder tumors are on the bladder base, the radium so inserted is in close contact with the tumor. If the carcinoma is on the vault or lateral walls, the patient lies on his abdomen or on one or the other side. After the treatment the radium is removed *per urethra* by a linen thread attached to the capsules.

The initial pain experienced is only that of the cystoscopy. The after-burn varies from none at all to more or less severe pain, beginning a few days after treatment and lasting from one day to several weeks.

In extensive carcinoma involving the bladder sphincter, irradiation may very much increase both the pain and the urinary frequency. It is to be used in these cases with caution.

EFFECT OF RADIUM ON BLADDER TUMORS.

In a large majority of the cases in which I have applied radium to bladder tumors, the hematuria has stopped two or three days after the irradiation. There is a suggestion in this that the primary effect of the radium is upon the blood vessels. If this is so it would in a measure explain why papillomata of the bladder, rich in blood vessels, react somewhat more slowly to radium than true carcinomata, which have poor and imperfectly developed blood vessels.

In some cases the rapidity of the action of radium is astonishing. Case 1 was irradiated January 19, and on February 4 (sixteen days later) cystoscopy showed that an extensive carcinoma had entirely disappeared.

Radium burns of normal portions of the bladder have occurred only in those cases in which the carcinoma was around the bladder neck, and in which the radium was pulled into the urethra and kept there for a long time. I have had two such cases; the burns last a long time, and cause considerable irritation. Division of the radium dose into two or more tubes, using somewhat smaller quantities, change in the position of the patient during application, and a fairly long interval between irradiations—six weeks or more—ought to prevent such burns.

SUMMARY OF CASES.

Two of the 25 cases of carcinoma of the bladder treated would have been considered good operative risks; the other 23 cases, because of the extent of the tumors, were all impossible operative risks. In 4 of the 25 cases (3 confirmed microscopically as carcinoma) radium has locally removed the growth. One of these has been cystoscopically cured for 10½ months, one for 5 months, and one recently. One has what is probably a slight local recurrence, although pathological examination of a piece removed does not confirm this view. These four cases are of sufficient interest to report in some detail.

Case 1. C. A. G., aged 69. Signs of malignancy: large tumor, vaginal induration not determined; sloughy in part. Microscopical diagnosis of carcinoma; fulgurated twice, and no headway.

History. Chief complaint, urinary frequency for the past year,—night 3 to 4 times, day every 3 to 4 hours, and pain following urination. She had been passing bloody urine for the past four months. A number of months before I saw her she was cystoscoped, and a diagnosis made of inoperable carcinoma. Cystoscopy showed large red carcinoma with necrotic patches on left side of her bladder, obscuring her left ureteral orifice. Tumor was probably as large as a fifty-cent piece. Specimen removed showed (Dr. Ewing): "The section is of a small mass of tumor tissue 2 mm. in diameter. It shows the structure of a small alveolar carcinoma, much inflamed, with dilated blood vessels. The cells are clear, irregular in size, with large hyperchromatic nuclei, and arranged in small groups. The stroma is scanty."

January 19, 1916, 100 mc. of screened radium in her bladder for eight hours.

February 4, she reported that she had some frequency and severe bladder pain for two days; then everything normal. Cystoscopy (with Drs. Keyes and Jeck) showed that the tumor had gone; the area was covered with normal mucous membrane, and the ureter visible.

December 19 she had a stellate, white scar over place occupied by tumor. No tumor visible. Reduplication of ureter.

Case 2. C. T., aged 59. Signs of malignancy: tumor as large as a ten-cent piece; no induration; ulcerated tumor. Microscopical diagnosis of carcinoma; fulgurated four times in six months and recurred.

History. Eight months before seen had occasional attacks of painless hematuria. He was cystoscoped, and a papilloma near the left ureter was seen. This was burned with high frequency four times in about six months, but had always recurred. Dr. Keyes saw it in January, 1916, when it was an ulcerated area with carcinomatous-looking lumps. A piece removed showed diffuse carcinoma (Dr. Ewing).

"The section is from a mass of tumor tissue 5 mm. in diameter. It presents a small alveolar and diffuse carcinomatous structure. The cells are extremely atypical, and some are of very large size, with very hyperchromatic nuclei. The outer portions are hydropic, the central areas show fibrosis, and here the tumor cells run in narrow rows or small groups."

February 11, 1916, 214 mc. of screened radium for seven hours.

May 2, cystoscopy showed normal mucous mem-

brane over the space occupied by the carcinoma. He had had 7 or 8 erections since treatment, while he had been practically impotent for 10 years before.

July, he had gained 10 pounds. Cystoscopy (Dr. Ballenger) negative.

On November 8, Dr. Ballenger reports "has passed no more blood. Cystoscopy about a month ago showed only a reddened place where the growth was. There has been a rather persistent cystitis."

CASE 3. Mrs. E. H. S., aged 54. Signs of malignancy: extensive tumor; vaginal induration as large as a silver dollar, sloughy in part. Microscopical diagnosis of papillomata; no fulguration.

History. Chief complaint, hematuria for the past year, and urinary frequency at night—5 to 20 times. Cystoscopy showed grape-like, red, partly sloughy tumor around the bladder neck. Vaginally there was an indurated area of the base of the bladder, nearly as large as a silver dollar. Specimen removed was reported as being papilloma (Dr. Ewing). Because of the induration, and because of the slough, I considered this carcinoma.

July 6, 116 mc. of radium in bladder neck for 6 hours. Reported one month later that she had a little discomfort in passing urine for a few days. She had gained 15 pounds in weight; got up but twice at night to urinate.

August 29, she still had tumor around bladder neck. 100 mc. of radium in bladder neck for 8 hours. She had no hematuria since the first radium.

October 30, 1916, reports she had no pain after the radium. Cystoscopy showed the tumor to be gone. She had gained 18 pounds in all. No induration of bladder base. Had no night urinary frequency.

CASE 4. J. A. H., aged 62. Signs of malignancy: tumor as large as a quarter; induration shown by cystoscopy; sloughy. Microscopical diagnosis of carcinoma; fulgurated twice, and tumor grown 2 or 3 times its original size.

History. Had two attacks of total hematuria, one month and eight days before seen. No night frequency; no loss of weight. Dr. Keyes saw by cystoscopy a red, lobulated, rather flat carcinoma above right ureter, burned it with high frequency and advised radium. The patient went to another physician, who fulgurated the tumor and decided against both operation and radium. About three months later he returned, when (with Dr. Keyes) a flat, sloughy in part, carcinoma was shown, two or three times the original size, extending from bladder neck to a point 2 cm. above right ureter. It had raised, thick, indurated edges. A specimen removed showed (Dr. Ewing) carcinoma. Two tubes of screened radium (one 90 and one 89 mc.) were left in his bladder 6 hours.

Two months later he returned, when there was seen redness of right side of his bladder, a small ulcer back of ureter (well away from where the tumor was), probably due to radium burn. *No other lesion was seen.*

Two months later there was a linear ulcer 1 cm. long, surrounded by puckered red mucosa on the anterior end of his original tumor. It looked like a recurrence, although a piece removed shows no carcinoma. Treated again by radium.

From results in these four cases it appears that radium can do as much as surgery for cases of bladder carcinoma without subjecting the patient to the danger and discomfort of a major operation. While these cases are entirely too few upon which to base any permanent deductions, I believe at the present time that the local removal of bladder carcinomata by radium depends upon two factors:

First, to get cases early enough, and, second, actually to apply the radium to the carcinoma.

Of the *twenty-one remaining cases*, eight have died, two as the result of transplantation of the ureters. Two are improving; one of these is a hopeless case, and one I have hopes of curing. Four I have not heard from since the irradiation, and the rest are too recently treated to report on.

These statistics are not brilliant, but one must remember that these twenty-one cases were all advanced carcinoma, and that all but one or two, in which a thought of cystectomy might have been entertained, were totally inoperable. A certain number of these hopeless cases were benefited by the irradiation. Some have gained weight, and in nearly all the hematuria has stopped. One patient, known to have lymphatic involvement beyond the bladder, came to me with a suprapubic opening (the result of an operation) as large as my index finger. Two months after one radium treatment, he had gained ten pounds in weight, his bleeding had entirely stopped, and his suprapubic wound closed; this notwithstanding the fact that his entire bladder was a mass of carcinoma.

INDICATIONS FOR THE USE OF RADIUM.

This brings us to the question, in what cases are we to use radium? I believe first that radium should be tried in all those cases in which we have reason to think the carcinoma is confined to the bladder, to see what the radium will do,—much as fulguration has been used as a diagnostic test of carcinoma. The second indication is hemorrhage from a bladder carcinoma. One dose of radium seems pretty consistently to check this symptom.

CARCINOMA OF THE PROSTATE.

From thirty cases of carcinoma of the prostate treated by radium since October, 1915, the following conclusions have been derived:

1. Radium treatment has caused with surprising regularity the reduction or disappearance of carcinomatous nodules of the prostate. Striking results have been obtained in both early and advanced cases. The early cases, those in which the carcinoma is fairly well confined to the prostate, and in which there is little or no perivascular infiltration, show shrinkage of the carcinoma. Very few advanced cases, those in which there is an enormous prostate, and in which the vesicles are hard and indurated, show any improvement.

2. The reduction which occurs in carcinomatous lobes is, as far as has been observed, permanent. One case has been followed for fifteen months, two for eight months, and more recent cases about a month or two after the reduction.

3. The symptoms in those cases in which the carcinoma had been reduced show striking improvement. This symptomatic improvement is shown in increased weight and strength, decrease in frequency of urination, and return of or improvement in erections.

One patient of 74 years, on whom a suprapubic exploration showed carcinoma of the prostate and who was treated but once with radium, gained eight pounds and reported five months later that he was then "doing a full day's work on steam boilers." He narrated, on questioning, that a full day's work was from 5 a.m. to 11 p.m.

Another who had no erections for 1½ years had a permanent return of this function. This patient, who had been invalided, gained 18 pounds, started in the mild work of shoveling snow and lifting ash cans, and now is doing a full day's work in a machine shop 16 months after his first treatment.

4. The technic of the radium application is as follows:

The emanations are placed in the end of a needle (gold or steel) extending from the tip 1½ inches along the sheath. These needles are 4 to 6 inches long, and are inserted through the perineum into the prostate or further into the vesicles. The perineum is anesthetized with 0.5% novocain and epinephrin, which makes the insertion practically painless. The needle is left in one lobe for six hours, and then changed to the other lobe. A finger in the rectum is used to guide the needle. Little or no pain is felt during the sojourn of the needle (12 hours), and the patient can either urinate or be catheterized. This means at most but twenty-four hours in the hospital; 50 mc. of radium are used in the end of the needle. Radium used in this way is practically unscreened, and the maximum effect of the radium takes place directly in the center of the carcinomatous nodule. The patient usually has pain in the prostate and urinary frequency beginning about 3 days after irradiation, and lasting a number of days to some weeks. In some cases in which I have used large doses the reaction has been severe. One has to be extremely careful about second or subsequent irradiations; the tissue seems to be much more sensitive to radium after the initial dose. Nearly all of my patients have been irradiated but once in two or three months, and no second treatment is given until the effect of the radium has entirely passed over.

5. The primary effect of the radium may be to increase the amount of residual urine (if there be any). The ultimate effect of the radium application on residual urine is probably nil, the amount neither increasing nor decreasing. Hence those patients who have chronic retention of urine require either the catheter or operation in addition to irradiation. It would seem wiser not to operate until the carcinomatous prostate had been thoroughly irradiated, and it would seem better not to operate at all if the patient can be trained to the use of the catheter.

6. No sloughs have resulted from the radium needles.

7. Radium apparently has a selective action on carcinoma. I conclude this from descriptions by Dr. James Ewing of carcinomata examined after radium treatment and from my own experience. I have used radium on an hypertrophied prostate with absolutely no effect, neither burning nor shrinkage occurring, yet the same amount of radium will markedly reduce a carcinomatous lobe. I have had a similar experience in a case of chronic contractive fibrosis of the corpora cavernosa.

8. The pathological examination of prostates removed after irradiation is of interest. In one case in which the prostate was removed because of urinary retention, a moderate dose of radium was given five months before the prostatectomy. The prostate had been considerably reduced in size following the radium treatment. At operation the prostate shelled out like a non-malignant adenoma. Dr. Ewing reported as follows:

"Material consists of several lobulated opaque portions of prostate, making a mass as large as a hen's egg. Much of this has the honey-comb appearance of chronic prostatitis. But some areas are very firm and solid. Two such areas, size of a bean, were sectioned. The main tissue of the gland shows lesions of chronic prostatitis with dilated glands and feeble epithelial proliferation. The solid areas show fibers of muscle tissue separated by rows of small epithelial cells with hyperchromatic nuclei. The appearance is that of diffuse carcinoma in a state of fibrosis. One area of adenocarcinoma is found in the center of a fibrosed area. There is no necrosis.

"In view of the history the diagnosis may be made of carcinoma, diffuse and adeno, arising on prostatitis, and undergoing atrophy and fibrosis from radium."

In another patient I gave one large dose of radium in August, 1916; the patient had a severe reaction. Five months later, because of retention, I took out as much of the prostate as I could. The pathological examination is as follows: (Dr. Ewing.) (Plates 1 and 2.)

"Portions of material, including a segment of urethra, received. They show subacute inflammation, hemorrhage and regressing changes in an alveolar carcinoma. The tumor alveoli are represented by groups of 5 to 10 epithelial cells with homogenous nuclei, clear cytoplasm, lying in dense fibromuscular tissue. Traces of these alveoli disappear in the exudate of round cells in many places."

It will be necessary to examine many more prostates which have been treated by radium before one can be sure that the above changes are due to the radium. The fact that carcinomatous lumps retrogress after radium treat-

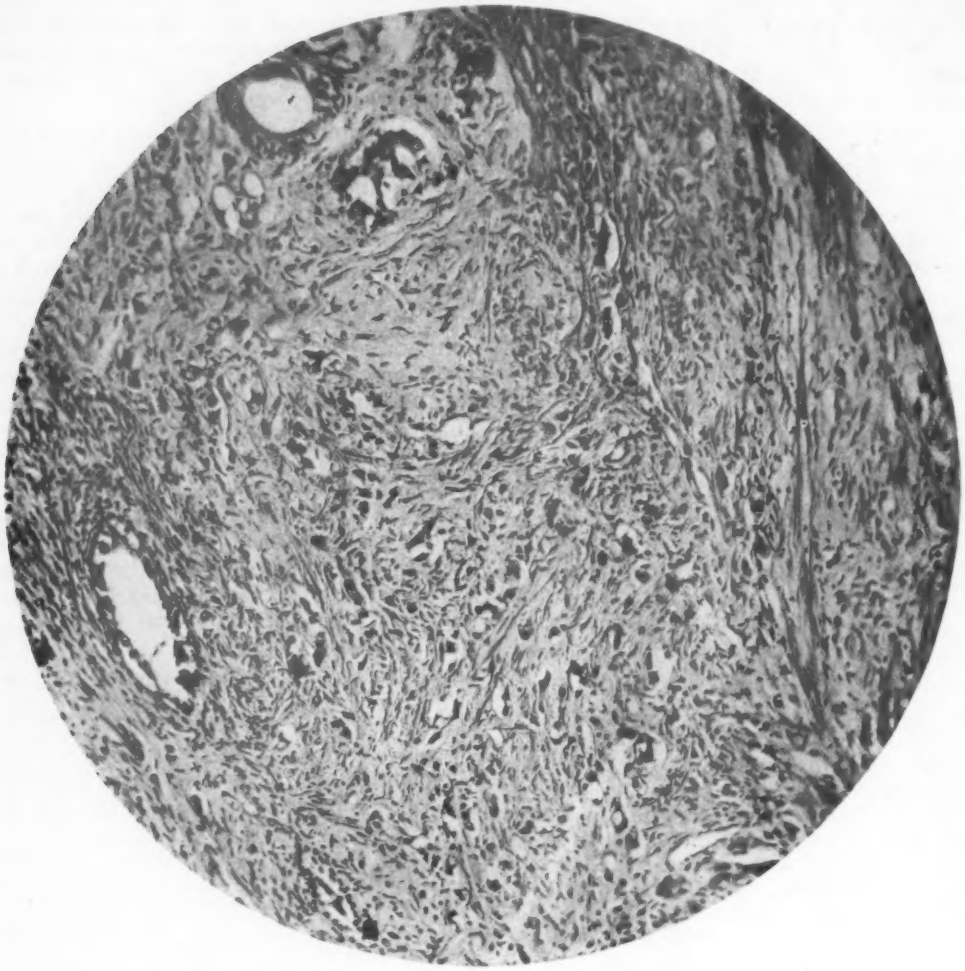


PLATE I. Prostatic carcinoma undergoing fibrosis and atrophy from radium treatment.

ment is "corroborative evidence" that radium causes a fibrosis in the carcinoma.

9. As far as I have observed clinically all the cases treated are of about the same degree of malignancy. There is a class of cases of prostatic carcinoma, however, of much more marked malignancy. In these the primary focus in the prostate is often overlooked., and the patient comes to be treated for a secondary focus. There have been two such cases at the Memorial Hospital, in both of which there was a large carcinoma of the neck, and it was only by examination in one case and necropsy in the other that the primary focus in the prostate was found. Such cases are apparently very malignant, and it is a question if we ever get them early enough for any treatment to count.

10. Very large carcinomata with cachexia and loss of weight are beyond radium or any other treatment.

11. Only time will tell us whether any of our patients have been cured. At the present time we can state that in fairly early cases a marked regression of the prostatic lumps, and in some cases a complete disappearance of these, has taken place. Accompanying this retrogression, the patients have improved in weight and bodily strength. Radium has done more for these cases than operation or any other known therapy.

SUMMARY OF PROSTATIC CASES.

Thirty cases of prostatic carcinoma have been treated.

Advanced Cases. Nineteen of these thirty cases were advanced, having either very large prostates or marked perivesicular involvement, or both. In four cases the carcinoma had directly invaded the bladder. In eleven of these nineteen a microscopical diagnosis of carcinoma has been made. Four of these nineteen have died. One is going rapidly down hill, one has been lost track of, but six months after a single treatment was reported as up and working. In three cases I have done a partial prostatectomy for retention after treating the carcinoma with radium. Two cases are distinctly improved. The remaining cases have been too recently treated to report, as it takes from four to six months to get any results from irradiation. The two improved cases are worth reporting:

Plate 2. Prostatic carcinoma undergoing fibrosis and atrophy from radium treatment.

Case 9. M. H., aged 65.

History. Had a sloughy pendunculated carcinoma removed from neck of the bladder by Dr. Keyes. This grew from the prostate, no removal of which was attempted.. The pathological examination (by Dr. Ewing) was as follows:

"The section is from a piece of tumor tissue 0.5 cm. in diameter. It shows a solid carcinoma composed of small and large groups of compact tumor cells with a very little stroma. The cells are of moderate size, polyhedral, with hyperchromatic nuclei. The vessels are scanty. There is no necrosis. It is impossible to state from the section whether there is any infiltration of the bladder wall. In structure the tumor is that of a fully developed carcinoma."

June 6, the right lobe of the prostate, which had a hard ridge, was treated with 93 mc. of radium for six hours.

September 12, patient did not have to rise at night; he went from 4 to 6 hours without urinating; he had gained 15 pounds, and the lump in the right lobe was about gone. There was infiltration running up into the right vesicle. (Examination with Drs. Keyes and Jeck.)

March 1, he still showed some induration of the right vesicle. He was doing a full day's work and has lost no weight.

Case 10. J. B. B., aged 75.

History. Night frequency of urination, two to six times, for some months. Residual urine, 2 to 3 ounces. No loss of weight. Prostatic examination (Dr. Keyes) showed an extensive lumpy carcinoma running into both vesicles, a little higher on the right side.

June 6, 99 mc. of radium in his right lobe for 6½ hours and left lobe for 5 hours.

October 9, patient had a very severe reaction with much pain, lasting from 4 to 6 weeks. During this time he lost 12 pounds. Examination of the prostate (with Dr. Keyes) shows that much of the prostatic carcinoma is gone, periprostatic region was still carcinomatous, as is also the region of the vesicles. He looked in excellent shape and had regained his weight. I treated the remaining carcinoma with radium, not with any hope of curing him, but with the hope of stopping the growth for a time. In February he was reported as sojourning in Florida.

Early Cases. Eleven of the thirty cases were, roughly speaking, early carcinoma. This does not mean that they were suitable for operation. As a matter of fact, because of the initial success of radium treatment I believe that no pa-

tient with prostatic carcinoma should be operated upon. With one of the eleven cases there was a question of the diagnosis. One of the eleven died four months after prostatectomy from the effects of the operation and old age (82 years). Six of the eleven cases are distinctly better, and the remaining four cases have been too recently treated to report upon. The histories of these six are briefly:

CASE 1. J. C. D., aged 59.

History. Chief complaint, loss of flesh and strength; night urinary frequency 3 to 4 times for 4 months. Pain in right thigh for 5 years. Prostatic examination (with Dr. Keyes) showed a large, hard, fixed, irregular prostate, each lobe about as large as half an English walnut; left lobe more prominent than right; little extension toward seminal vesicles. Radium treatment October 20, 1915; 50 mc. in left lobe 6 hours, and in right lobe a similar time.

November 17, 1915, reported that he had considerable burning after the treatment, and that he had a number of erections since (erections had been lost for 1½ years). Prostate felt the same.

January 14, 1916, he had gained about 10 pounds; felt fine. (Examination of prostate with Dr. Keyes.) There was a marked shrinkage of the carcinoma. Dr. Keyes said: "It is more the slight irregularity of the prostate that suggests carcinoma than anything else." I gave him 60 mc. of radium for 4 hours in both lobes.

January 31, 1916, he had gained 6 pounds more, making 16 in all, and had no pain from the radium; arose once at night to urinate.

February 18, 1916, not up at all at night to urinate; gained 2 more pounds in weight. Slight induration at base of the prostate, 38 mc. of radium in right lobe for 8½ hours.

April 4, 1916, .75 mc. in right lobe for 4 hours, then in left lobe 4 hours.

June 30, he had been working in the machine shop for 6 weeks, and had lost a couple of pounds. Had some burn after the radium, which has caused increase in night urination (3 to 4 times). In the center of the left lobe there was a small fairly hard lump, and a slight hard ridge in the right lobe.

November 17, weight the same. Working (sometimes 15 hours a day). A ridge in either lobe. I could not say whether or not it was carcinomatous.

February 12, examination of the prostate the same. Fine condition. Doing a full day's work. Again treated with radium.

CASE 3. J. J. C., aged 71. Chief complaint is urinary frequency, chiefly at night (3 to 4 times) for the past 6 months, then acute retention. He had lost about 8 pounds in weight. Prostatic examination showed a flat, hard, irregular prostate, with prominent nodules at prostato-vesicular junction, extending into the vesicles. (Examination with Dr. Keyes.) Several other physicians examined the case and thought the diagnosis was not positive, but that it was very suspicious of carcinoma. 45 mc. of radium in right lobe for 7 hours, and in left lobe for 5½ hours (February 8, 1916).

March 17, 1916, reported not up at all at night to urinate, doing a full day's work and no pain at all after the radium.

May 23, the radium was repeated, after which he had pain and frequency of urination for a few days.

October 16 (examination with Dr. Keyes). Lost 2 or 3 pounds; is the picture of health. He had never been catheterized since beginning the radium treatment. Marrow fat pea at the right prostato-vesiculo-junction, nothing in vesicle or along upper border of prostate. There was a ridge along lateral edge of right lobe, not extending beyond the prostate; nothing in vesicles.

January 15, he had lumps at either upper margin of his prostate. If anything, they had slightly increased in size. He was doing a full day's work, and was in excellent condition. Again treated with radium, 62 mc. in right lobe 6 hours, and 6 hours in left lobe.

CASE 6. W. C., aged 58. Chief complaint slight increase in frequency of urination (once at night). (Examination of prostate with Drs. Keyes, MacKenzie and Jeck.) Left lobe of prostate soft; right lobe hard, nodular, not large. Nothing in vesicles.

May 23, 50 mc. of radium in right lobe 11½ hours.

August 29, had pain after the radium, his symptoms were the same, and the prostatic carcinoma feels the same. 100 mc. of radium 4 hours in right lobe.

November 8, carcinomatous lump feels the same. He had some hematuria for 2 days. There was a slight irregularity of the lateral lobes of his prostate as seen by cystoscope. 102 mc. of radium in his urethra for 6 hours.

January 26, not up at all at night. Still working a full day. Prostate felt the same as when first examined. 64 mc. in right lobe 6 hours, and left lobe 6 hours.

February 13, the lump in his right lobe was apparently about gone. He had considerable burning after his radium, and he was now getting over the effect of this.

CASE 15. A. S., aged 68. This patient was operated upon by Dr. Keyes in the spring of 1916 for hypertrophied prostate. Pathological examination of the removed prostate showed no malignancy. He came back to Bellevue in September with a hernia, upon which I operated, at the same time taking out a small prostatic lobe in the floor of his urethra. This proved to be carcinoma on pathological examination. He weighed 168 pounds before the operation. Rectal examination revealed a diffuse infiltration over the bladder base, with some slight lumps. (Examination with Dr. Keyes.)

October 17, 57 mc. of radium was inserted for 6 hours in the middle of his prostate.

December 4, had gained 20 pounds, erections had improved; he had a solid, hard lump at the apex (left) of his prostate; all the rest felt pretty soft.

January 16, 65 mc. of radium in left lobe 6 hours, and in right lobe 6 hours.

February 19 (examination with Dr. Keyes): His prostate felt irregular, but there was nothing absolutely characteristic of carcinoma. He is a veteran, and had offered his services to his country in the event of war. I also learned that he wishes to get married.

CASE 17. H. C. A., aged 62. Chief complaints are urgency of urination, sometimes bleeding, and for the past year nocturnal frequency. Now he

arises four times at night. His residual was one ounce, and his prostate was small, irregular and stony hard.

September 25, 50 mc. of radium in right lobe 4 hours, and in left lobe 4 hours.

January 31, he reported that he had considerable burning after the irradiation. He was now urinating 3 times at night, and by day every 2½ hours. He had ½ ounce residual urine. Prostatic examination (with Dr. Keyes) showed a little, hard lump beginning in the left center, and going to left lobe. Right lobe possibly a little irregular. A decided change from the first examination.

March 1, 50 mc. in right and 50 in left lobes for 6 hours.

Society Report.

NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION. MEETING IN BOSTON, MARCH 13, 1917.

I. Presentation of Specimens, Instruments, etc., and Report of Cases.

Dr. Keefe: I wish to report a case of a woman about 52 years of age upon whom I did a hysterectomy for fibrosis six years ago. She presented herself stating that she had some trouble about the vulva and upon examination there was a mass there about as large as the first joint of your thumb. It was mahogany in color. She said she had had some frequency of micturition. I thought possibly there was some mistake about it, and it might have been a polyp growing from the cervical canal, with a long pedicle, which might have protruded recently at the vulva.

The day that she was etherized, as the assistant was about to catheterize, he said he did not find any urethra there. So then I examined and found that this had no connection whatever with the cervix. I could feel the cervix absolutely normal. On the under surface of this mass there was an opening and I was able to pass a catheter into the bladder. That was the opening of the urethra. It proved to be a case of eversion of the urethra. I was unable to reduce it by pushing the mucous membrane forward into the bladder. It was so dilated that I could pass my index finger into the bladder. I thought possibly there was a stone, but there was no stone there.

I wondered how to retain it, as I had never seen a case of that sort before. I finally thought of laceration through the sphincter ani muscle, so I made an incision on the under surface of the meatus and then went in with a tenaculum. I drew the muscle forward on either side and placed two sutures which pulled that circular muscle together more than it would be normally. Then I passed another catgut suture about the urethra. I passed it through the incision that I had made up to the right side, coming out above the meatus and then going through the same opening again, passed it on the left side and down. I introduced a good-sized probe and then tied my suture about that. Then I tied the two sutures that I had on the muscle and put about three superficial sutures in the mucous membrane.

This patient was in my office yesterday and she has had complete retention of the urine since we operated. It seems like a normal meatus and she has no difficulty at the present time.

Dr. Codman: I recently had a patient with a large abdominal tumor. She was a woman about 40 years old. The tumor extended from the epigastric region left of the median line downwards into the pelvis. You could feel it through the back. It had developed since last November, without pain or any other symptoms. She had a certain amount of what she called a crowding feeling after eating; but that was only what would take place mechanically from such a large tumor. She had had amenorrhoea for a year and a half.

Besides the tumor she had various anatomical peculiarities which were interesting. She had a partial hermaphroditism, with a well formed, small penis and breasts that were shrunken and almost like male breasts, with hair about the nipples and median line of chest, and also more or less beard. When she was shaved and you would see her dressed for the street, she had no masculine appearance at all, but was rather nice looking. Her elder sister told me that when the patient was a girl she had been rather masculine in her dress, tomboyish and very muscular and strong.

I asked Dr. Chute to see her in consultation. There was no abnormality of urine in any way, and I thought the tumor was probably renal. It was a question whether it was cystic or solid. Dr. Chute thought it was a hypernephroma. I operated, and if I had known enough I could have made a diagnosis before operation. I have spoken to a good many surgeons about the case since, and asked them to guess what it was. I think it would be interesting to ask if anyone here could make a diagnosis on what I have told them. It is quite possible to make a diagnosis in such a case. The only surgeon that I have asked about it who could make a diagnosis, was Dr. Kelley's assistant in Baltimore, Dr. Burnam. Well, it proved to be a malignant tumor of the adrenal body separate from the kidney. In looking up the literature I found that it was characteristic of some tumors in the adrenal to have these secondary sexual changes, particularly the hirsuties, which are supposed to be due to disturbance of the internal secretion.

Dr. Chute: I saw that patient, and I think Dr. Codman has neglected to say anything about the characteristic appearance of the tumor. It had that Indian pudding effect which seemed to me to be characteristic of the thing.

Dr. Codman: Histologically, Dr. Wright said that it was not a hypernephroma, although from its gross appearance it looked like hypernephroma. It did resemble exactly a baked Indian pudding.

Dr. Barney: I should like to ask if there was any change in blood pressure in that case.

Dr. Codman: None that I recall.

Dr. Tenney: I have here a stone I removed last week from a man 72 years of age. Six years before he had had a suprapubic prostatectomy. He had a rather miserable convalescence from this operation, and had not had comfort otherwise. The sound quickly found a stone in his prostatic cavity, and this was removed.

[Presentation of stone]

This other stone is from a man who had an x-ray plate at the Homeopathic Hospital in 1913. It was on the left side, showing a ureteral calculus. I saw him in June, 1916, and Dr. George took this plate, showing a decided change in the character of the ureteral calculus. It came out in fragments and it was possible to put a pair of Kelley clamps directly into the bladder. It was in the ureter and had not broken through the wall of the ureter. Usually the supposition would be that it would be outside, but as far as I could determine it was in the ureter itself. That is a rather striking change in three years.

His condition is all right now. He came to me a few days ago with a little symptom of obstruction on that side, and I was able to get a ureteral catheter in there about an inch.

DR. CHUTE: I would like to present the report of a case with an unusual condition. Here is a kidney that I removed about a month ago in a woman 27 years old. Her history was that a year before that she began to have trouble. I sent her to the hospital and looked her over very carefully. The first thing I wanted was a radiograph and we took several. I passed a radiographic catheter up the left side and when the plates were developed we found nothing. We did that twice before we decided that it probably did not go up into the loin. Then by the fluoroscope we found that the thing was coiled up down below. It was evident that she had pelvic kidney and her trouble was that she had symptoms of mild pyelitis and a bad time at menstruation.

A month ago she came in and we went down retroperitoneally and this thing lay in the pelvis. The change had stopped probably about the seventh or eighth week in intrauterine life, and therefore the thing had not rotated. There was an accessory blood supply from the internal iliac and there was also a blood supply from, I should judge, the media sacralis. The operation was extremely hard because we could not go ahead with any degree of safety, but the patient has made a normal convalescence and has gone home well, with a good secretion from the kidney.

She was a young married woman who had been married about a year, and was very anxious to have children.

The kidney has not been opened, but I had a thorium injection, which does not show very much change from the normal in the arrangement of the calices. You can get an idea of them there. In the picture the big curve represents the ureter as it juts forward.

DR. BARNEY: I have here a specimen of a tumor of the penis. This man was a freight brakeman 30 years of age, and he had no history of venereal disease or of injury to the penis. He said that two months before he had noticed a small red spot somewhat like a pimple, on the glans, which kept on growing slowly, but steadily. He had no pain but there was occasional burning and itching and that is all the thing amounted to. An examination showed that on the dorsal aspect of the glans there was an irregularly oval mass about 2 x ½ c.m. It was not tender and apparently not connected with the deeper structures. It had a peculiar purple color. There were no glands in the groin. The mass looked at first sight more like a hematoma. I asked if he had had any injury, and he said there had been none.

I took it out with novocaine very easily. I cut down into the tissue of the glans and had very little bleeding, and finished with two or three interrupted catgut sutures.

I gave the specimen to Dr. Harry Hartwell, who made the following report:

"The specimen consisted of a flattened piece of tissue from the penis about the size of a small button. The microscopical examination presents some rather unusual features, and I have delayed some time waiting for specially stained sections before making my report.

The little tumor has replaced the epithelium and corium. It is made up of wide columns of small undifferentiated cells, with round, sharply staining nuclei and fairly abundant cytoplasm. These cell columns are separated from each other by wide blood vessels. The most striking characteristic is the presence of gland tubules of various sizes. They are lined by a single layer of cells, and are frequently widely distended with pale blue or eosin-staining, homogenous material. These tubules resemble very strongly the follicles of the thyroid. In other places there are structures which suggest the anlage of the sympathetic ganglia,—rings of small pyriform cells with fibrils radiating to a common center, the so-called rosettes which are found in neurocytoma.

"These characteristics suggest the origin of the tumor from different germ layers, and hence it may be classed as a teratoma."

I have looked the literature over fairly well, and I cannot find anything like this mentioned.

I have here a section of the tumor under the microscope in case anybody is interested.

DR. BARRINGER: Did you consider it malignant teratoma on account of the pathological picture?

DR. BARNEY: I should say that it probably was not malignant. It was excised last October, and enough time has not as yet elapsed to be sure.

DR. TOWNSEND: I would like to show a stone and plate. The stone I removed from the bladder of a man who had a suprapubic cystotomy two years ago, at which time a stone was removed. Following the removal of the stone, he got no relief from the operation. His pyuria persisted and also the vesical spasm. I cystoscoped him and found a stone attached to one of the inner diverticuli. A part of the stone broke off. This part I am showing was free in the bladder, and the rest of it was through in the diverticulum.

DR. R. F. O'NEIL, Boston: The calculus which Dr. Townsend has just shown is one of the so-called dumb-bell calculi, in which one-half of the stone is concealed by a diverticulum.

This morning, after doing a litholapaxy for a vesical calculus, on introducing the evacuator I was unable to get back as many fragments as I thought there should be. On cystoscoping the case, the orifice of a diverticulum about the size of the end of the finger was seen. This diverticulum had probably been concealed by the calculus at a previous cystoscopy. I was unable to evacuate the fragments from this diverticulum, so did a suprapubic cystotomy and removed them with forceps. The diverticulum was deeply seated, and its capacity was about an ounce. As the patient had

been under the anesthetic for some time, no attempt was made to remove the diverticulum.

(NOTE.—The patient has since been discharged from the hospital with no residual urine, so it may be assumed that the diverticulum was not of great consequence.)

DR. CROSBIE: I was recently called out to St. Elizabeth's Hospital to see a man whom his physician had attempted to catheterize, without success: then the house officer had also tried, and he could not get any results. The man was about 50 years old and did not look a bit sick. He was a large, florid man with good color. His tongue was clean and mind clear. He had a large abdomen, and I was unable to feel an over-distended bladder. He gave a history of not being able to pass urine for three days.

I examined him by rectum, and found that the prostate was not enlarged. Following the examination, the patient passed two ounces of bloody urine. I then passed a catheter without difficulty and obtained no urine. The little urine he had passed was full of blood so that the examination of it was worth very little. I felt that the man was a malingerer. He was a freight handler, and I thought he was probably trying to work the insurance company.

I put him on forced fluids and observation. I saw him again early the next morning and he was feeling very well and eating breakfast. His chart recorded that he had passed 20 ounces of urine during the night, but I found later that that was a mistake in the chart. I left orders for him to be x-rayed. It was done and the x-rays were negative. His blood pressure, however, was 230. By evening of that day he had not passed any more urine, and at that time I found out that the record of 20 ounces in the morning was wrong. He was put in hot packs and fluids were forced. The next morning conditions were unchanged. Still he was not sick, and his tongue was clean, showing no signs of renal insufficiency. At that time it was five days since he had passed any urine to speak of. I catheterized both ureters and obtained no urine from either side. The patient still was not very sick. Dr. Chute saw him and he felt that he ought to have something done immediately, so the patient was etherized, and under ether we were able to feel a mass in the left loin.

Dr. Chute thought we ought to cut down on that side, and we found a tremendously enlarged left kidney, surrounded by a great deal of inflammation. In the first part of the ureter on that side a stone could be felt. The pelvis was opened and this stone was removed. Dr. Chute then did a nephrostomy so as to be sure to get free drainage. In removing the stone several ounces of turbid urine came out. The patient then was not in good condition, so nothing further was done. He was put to bed and given salt solution. That night his dressing was soaked, and during the next day. The day following the operation, the patient went into coma and died that night.

The kidneys were both removed, and it was found that both kidneys showed a chronic inflammation. The right kidney was much better than the left. The left kidney had been blocked off by this stone, but on the right side there was nothing at all to block the outflow of urine. Sections from the right kidney showed a chronic inflammation, but yet there was not the inflammation of an acute nephritis, in which the tubules are blocked with exudate.

It was apparently a case of reflex anuria.

As to the reason why the x-ray was negative—after we took the stone out Dr. Chute had it x-rayed by itself, and then in a small sac containing water. By itself the stone showed, but as soon as it was surrounded by fluid it did not show at all. That was apparently the reason why we did not find the stone in the x-ray examination. Chemical analysis showed the stone to be pure uric acid.

DR. CHUTE: This case broke all my ideas to pieces. I had laughed about the reflex anuria. It seemed to me that it probably meant insufficient and inaccurate diagnosis, and yet when you see that kidney it is a pretty good-looking kidney.

It to me was very interesting, and the pathetic part of the thing is that I should probably do the same again under the same conditions.

We made a mistake, but I do not see how we could have helped ourselves under similar conditions.

DR. QUINBY: I want to call your attention very briefly to some cases which should have come in at the first part of your program.

There is something marvelous I think about the amount of stone formation which a kidney may contain and still show no symptoms. This first case occurred in a woman of 54 years, and was found only on investigation by her doctor, who was seeking for a cause of suppuration. She had complained of some rheumatic pains in one knee joint and had her teeth x-rayed. It was finally discovered that she had that stone in the pelvis of her kidney. She was absolutely without symptoms. It showed only in the x-ray, without making itself manifest in the urine, which contained no casts and no blood. The function of each kidney was 15% in three-quarters of an hour. The stone fitted the renal pelvis quite snugly.

There was a similar case, rather more marked in extent, in a man who applied for a life insurance. He was told that he had a pyuria. I removed that kidney, which had only about 5% function, in comparison with the other side, which showed possibly 35%. These two cases would compare with each other.

One other is that of a boy whose urine was negative entirely, and from his history one might have supposed him to be of a neurasthenic type. He complained of pain in his left hypochondrium. It was found on examination that the left kidney was possibly one-fifth the value of the right. Using thorium under gravity, this picture was produced, with the ureter somewhat dilated. Using a little more pressure, a different picture was produced. At operation his kidney showed the embryological destruction of blood vessels, one at either pole.

II. PAPER BY DR. BARRINGER—RADIUM TREATMENT OF CARCINOMA OF THE BLADDER AND PROSTATE.*

DISCUSSION.

DR. DUANE: It gives me very great pleasure to open the discussion on this interesting paper which Dr. Barringer has just presented to the meeting.

There are two points which have interested me very much in his talk,—in the first place, the fact that he is treating these prostate tumors or carcino-

* See JOURNAL, p. 444.

mata from the inside rather than from the outside, by inserting the active substance into the mass of the tumor itself. In all cases in which this is possible, it seems wise to do it. It seems from a scientific point of view the proper thing to do; for if you radiate the tumor from the inside, so to speak, you are radiating the tumor tissue much more strongly than the normal tissue around it. If you attempt to do it from the outside, of course the normal tissues surrounding the tumor get more radiation than the tumor itself.

The second point which impresses me is the fact that Dr. Barringer is treating these cases himself. That is not always so in radiotherapy. It is apt to be the case that the surgeon in charge will give the actual treatment to an assistant or put it in the hands of nurses. That has been done to a very great extent, and I am very glad to hear that Dr. Barringer is actually making the applications himself.

At the Huntington Hospital, according to the report that the Cancer Commission published for the year ending on the first of July last, the commission has treated some 500 cases during the year with radium, cases of malignant growths; but of those 500 cases only one was a case of carcinoma of the bladder, and only three were cases of carcinoma of the prostate; so that the number of cases that we had is so small that it does not seem to be worth while for us to make any particular statements or draw any conclusions; and I shall, therefore, confine my remarks to a few general statements regarding the principles of radiating tumors with radioactive substances from the inside, and showing you a few of the instruments that we use for this purpose.

[Slides]

The first slide that I have to show you represents the methods that we use for inserting the radioactive substances into the center of tumors. We make a sort of extract from the radium (this extract is called radium emanation), and compress it into a little glass tube that you see at this point. These glass tubes may be inserted through this trochar into the tissue and abandoned there. The radioactive substances gradually transform themselves, half the radioactive substance disappearing in about four days, half of what is left in four more days, etc., so that by this method, a prolonged radiation, lasting for a number of days, may be obtained. A correspondingly small amount of the active substance, of course, is used. These long, thin metal tubes with sharp points on the ends represent metal needles, in the tips of which are placed the tiny glass tubes containing the emanation. These are used for inserting the active tubes into the tumor, when it is desired to withdraw the activity after a few hours' treatment.

It is very important to know just how penetrating the rays that come from an applicator are. The curves of this second slide represent two extreme cases. They have been drawn from experiment. The upper curve represents the absorption of the rays in water; they have already passed through about two millimeters of lead as a filter. It is evident from the curve that the radiant energy passes several centimeters through water before the radiation has been reduced to one-half its intensity. The lower of the two curves represents another extreme case, *i. e.*, that in which there is scarcely any filtration. In this case, as you see, practically all the energy is absorbed before the radiation has penetrated more than four or five millimeters through the water. The absorption by soft tissues is practically the same as that by water.

In the case of the surgeon, he is the man who decides what is to be done, and he is the man who actually wields the knife; and it seems to me that in radiotherapy the man who decides what to do should be the man to make the applications, because radium is a very much more complicated physical agent than a knife is, and requires a good deal more skill to manipulate than a knife does.

I think you will join me in extending thanks to Dr. Barringer for coming here and delivering this paper tonight.

DR. CROSBIE: There was one point I did not quite understand, and that was regarding the change that the carcinomata undergo after the treatment by radium. Dr. Barringer mentioned that certain alveoli were breaking down. My impression was that the ordinary prostatic carcinomata are not made up of alveoli, but, rather, solid masses of epithelial cells, so I did not see what changes of the alveoli would mean.

DR. CHUTE: I was very much interested in Dr. Barringer's paper, although I have had no experience in this line. It teaches us one thing, and that is that you have got to be careful about drawing conclusions. There are a number of cases in which the natural history is slow. Any number of these cases run from two to five years after you have proved them clinically. Those that are clinically carcinoma and microscopically carcinoma get along very well for a long time. It is hard to draw conclusions.

Early in February I saw a man whom Dr. O'Neil and I operated on just four years ago. That man had a very marked clinical carcinoma of the prostate. He was very uncomfortable and we took it out. He has had three years and four months now of practical comfort, and his condition was, as I remember it, much as before, so that I told the family I thought we could give him the same relief that we had before.

Another case is apparently well after five years. While a good many carcinomata do not run that length of time, there are some of them that are really very tolerant.

I have had absolutely no experience, however, with the radium treatment.

DR. SMITH: I can say absolutely nothing about the radium treatment either, but it seems to me that if we have here a substance which will do the same thing that an operation will do, it is vastly better, particularly in these cases of infiltrating carcinoma of the bladder.

If you can give them an extension of life with pretty comfortable existence for even ten months, it is well worth following the thing through to the last analysis.

I have been very much interested in Dr. Barringer's paper, and wish to express my appreciation of it.

DR. R. F. O'NEIL, Boston: I am very much interested in this paper of Dr. Barringer's, and I am sure we are very much obliged to him for taking the trouble to come on and give it to us. I think some of the results are very strikingly encouraging. I also think that it is a line of work which we

should pursue here in Boston, if possible, and with the facilities and coöperation of the Huntington Hospital, I think we will be able to do much more than we have in this field.

I should like to ask Dr. Barringer if he has heard any of the results from the Johns Hopkins Hospital in Baltimore. I was there a short time ago and saw some of their cases, in which apparently there had been symptomatic and local improvement. Their method of the application of radium differs from that used by Dr. Barringer. They employ various types of modified cystoscopes for intravesical application; also make applications by rectum. It seems to me that the principle employed by Dr. Barringer, of introducing a needle into the growth without affecting the surrounding normal tissues, has a great deal to recommend it.

DR. CODMAN: I would like to speak of a case of an enormous tumor which I operated on last year, and which Dr. Duane was kind enough to help me treat with radium. This case entirely changed my point of view about radium. I had been rather skeptical before.

This patient had a tumor that was absolutely inoperable. It extended two inches above the umbilicus. It was a firm, fixed thing, somewhat elastic. It involved all the pelvic organs so that I could not see the uterus or make out the position of the adnexa at all. I removed a piece of the tumor and sent it to Dr. Wright for pathological examination, and he reported that it was a form of carcinoma. It showed a finely divided microscopic calcareous material.

I thought it was absolutely inoperable, but I racked my brains to think of what I possibly could do to relieve the woman. I thought perhaps I might introduce radium into the center of this thing. I closed the abdomen so that the tumor lay next to the abdominal wall, and then I sent the members of the patient's family to consult Dr. Kelley in Baltimore and Dr. Clark in Philadelphia, and also I consulted Dr. Greenough here in Boston. They all felt that it was justifiable, so I made an incision again in the old incision and cut into the thing. It was perhaps ½ or ¾ inch thick, firm, cartilaginous, filled with bloody fluid. It was multilocular. The fluid was thick and dark.

After some difficulty I got my instruments through from abdomen to vagina. It was a very serious operation. I put through a tube about as big as an ordinary garden hose pipe and inside of that tube I put a fenestrated tube so arranged that I could keep the thing clean and irrigated, and then Dr. Duane and Dr. Greenough were kind enough to let me use the radium of the Huntington Hospital, through the tube.

This main mass of tumor has gone away and the woman is practically well and has gained weight. There is a mass perhaps as big as a fist in the pelvis at the last examination. She has kept up the radium treatment at intervals, and, unfortunately, at the last treatment she got a bad superficial burn. Instead of the tumor there is now a soft, flaccid wall. The uterus is freely movable, and you can feel the adnexa and a mass which may be partly inflammatory.

I am a convert to the radium idea, and I think that may help back up Dr. Barringer's assertions on the prostatic cases.

DISCUSSION.

DR. O'NEIL: I would like to ask Dr. Barringer if he has had any returns from the Hopkins in Baltimore. I was there not long ago and found their method rather different. They showed me some cases which were certainly wonderful, where the masses had subsided and the patients had been improved, with a reduction of hematoma and difficulty of micturition, etc.

They were not over-enthusiastic, but still they had some goods to show.

DR. L'ESPERANCE: I am interested in the treatment with radium of the condition of chronic circumscribed inflammation of the corpora cavernosa, and I would like to know what are the results obtained with this treatment. We recommended a patient to the Huntington Hospital, and he returned to us a short time afterwards with a rather severe burn and no improvement of the fibrosis.

I would like to know what Dr. Barringer's experience has been in that line of work.

DR. BARRINGER (in closing): I am sure I am greatly indebted to the members of the Society, and especially Dr. Duane, for their discussion on this rather intricate subject.

To answer these questions *seriatim*, I will say to Dr. Crosbie that I am not a pathologist. As I understand it, the alveoli are the carcinomatous parts of the prostate, and when these alveoli break up, when they show disintegration, it looks as if they were undergoing some sort of retrogressive changes. As I said, I do not think these few cases prove anything; they simply are suggestive.

I entirely agree with Dr. Chute that carcinoma of the prostate is, in most cases, a long disease, but in all these cases, if you bar operation for carcinoma of the prostate, we see a progressive going down hill. They lose weight and are very apt to get up irritating symptoms, and each time you examine the prostate you will find a new enlarging lump and new lumps going up the vesicles. At least, that has been my experience. Removal of a carcinoma of the prostate is a very severe operation, entailing cutting off the neck of the bladder, dissecting out the seminal vesicles, cutting off the urethra and stitching the urethra to the bladder. If the operation itself is successful, the after-effects are very apt to be unsuccessful in the fact that the carcinoma is very likely to return, and the patient has partial or complete incontinence of urine. The results have been so bad that most surgeons do not operate in these cases.

At the Johns Hopkins they have not operated in two or three years to take out a carcinoma of the prostate. The patients treated by radium increase in weight and the cancerous lumps go down, not wholly or completely, possibly, but they are distinctly smaller. Whether any of them are cured I doubt. I think, however, we can say that we have achieved a retrogression in the carcinoma. I am sure we have added a few months to these patients' lives and certainly a few months to their happiness and working power. In the first case that I reported the patient has worked nearly a year now.

In carcinoma of the bladder the operative statistics are probably considerably better than those in carcinoma of the prostate. On the other hand, in these four cases that I presented tonight I believe that we have done as much with radium as you can do with an operation, and they have not been sub-

jected to a major operation. Certainly in one of these cases we should have had to reimplant the ureter. In these patients who are so poorly equipped to endure surgery because of their age, one or two radium treatments have done all that an operation could do.

As to the Hopkins results, I hear various reports from them. I think they give very good returns in their carcinoma of the prostate. I have not used the method that they use there, that is, irradiation by means of rectum and urethra, rectum two-thirds and urethra one-third, because it seemed to me it was so easy to put the needle right in the middle of the prostatic lobe. I may change later to the Hopkins method, but I am going to try my way for a while longer, as it seems worth trying. The only case that I have seen treated by radium rectally was treated by a man who knows much more about radium than I do. This was a carcinoma of the prostate, and the patient got up rectal symptoms, tenesmus and irritation. He went on from bad to worse, and finally died uremic. I think he died from the radium burns. They cause considerable toxemia,—enough to be capable of killing a patient. I recently saw a case of carcinoma of the uterus where there was a slough of the uterus, bladder and vagina caused by radium. That patient died of slough from radium, and not from carcinoma.

You have got to be extremely careful to treat very lightly and gently, as radium goes much deeper than we suspect.

I think the Hopkins reports on carcinoma of the bladder have been rather unfavorable. I do not know why they have not been effective. Perhaps they have had late cases. It does not seem to me that placing the cystoscope in the bladder and holding the radium against the tumor is effective. It does not seem that you can give a long enough burn materially to affect the tumor.

Cases of chronic contractive fibrosis of the corpora cavernosa have troubled us some. I recall one of a man who got a slough of the surface of the penis considerably away from where the radium was. It was nearly healed when I last saw him, but the fibrosis was going merrily on its way.

Book Reviews.

The Medical Clinics of Chicago, January, 1917. Philadelphia and London: W. B. Saunders Company.

In this number eleven clinicians take up a wide variety of topics. Of particular interest is an excellent summary of barium diagnosis by Dr. Case. A case of true amebic dysentery developing in Chicago is also briefly recorded. The other discussions conform to the general plan of previous numbers.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Begnners in Chemistry. A Text-Book Specially Adapted for Students of Medicine, Pharmacy and Dentistry. By W. SIMON, Ph.D., M.D., Late Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, and in the Baltimore College of Dental Surgery; and DANIEL BASE, Ph.D., Professor of Chemistry in the Maryland College of Pharmacy, Department of the University of Maryland, Baltimore. Eleventh edition, thoroughly revised. With fifty-five illustrations, one colored spectra plate and six colored plates representing forty-eight chemical reactions. Philadelphia and New York: Lea & Febiger. 1916.

This well-known volume has now appeared in its eleventh edition with many improvements. There could be no greater monument to its distinguished and well-known author, who first presented the work for preparation in chemistry for medical and dental students. At the time when no preliminary scientific education was demanded of such students, it proved the most satisfactory of all works of that character.

Under the direction of Dr. Simon's co-author, the present revision has been made to comply with the present-day requirements of those of whom preliminary scientific education is not demanded.

The section on physics has been omitted probably in conformity with the changes in medical education previously mentioned. Though the section on metals has been revised and improved, we still think that it is too extensive and includes many metals which have little or no importance in a purely premedical course in chemistry, though undoubtedly very essential in the consideration of chemistry as a science. Both qualitative and quantitative methods have been discussed in the work and evidently with a fullness necessary for the limited scope of the book.

The section on organic chemistry is quite complete and furnishes all that is necessary for beginning the study of biochemistry.

Were the work to cease at this point, we could heartily commend the program laid out by the authors. The attempt at the discussion of proteins, however, with our enormous knowledge existing at present, is so brief and incomplete that it acts as a blot upon an otherwise admirable volume.

Just what part this work is to play in future medical education is hard to say, but apparently it must be restricted to the so-called premedical course which is given temporarily by medical schools in preparation for the further study of medicine.

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RECONSTRUCTION HOSPITALS.

In previous issues of the Journal, mention has been made of the plan of the Surgeon-General to establish reconstruction hospitals throughout the United States, where crippled soldiers may be treated and prevented, to a large extent, from becoming handicapped or helpless because of their injuries, and, in particular, mention has been made of the project to build such a hospital on Parker Hill, Roxbury.

It is the understanding—though no order has been issued—that the Boston Unit "Reconstruction Base Hospital No. 1" is to be the first to be built, isto be built very soon, and is to serve as a model and experiment station for the rest. The plans, prepared in detail for this hospital, are now being gone over in Washington with a huge standardization of all these hospitals for the whole service. A standardization of special equipment for mechanotherapy, etc., and for the scheme of enrollment and assignment of physical therapeutists, including masseuses, is being pushed forward and the standardization of splints and other apparatus of the sort, a very important matter, is pretty well worked out. As we see the size of this problem presented, the problems of organization and standardization become more important than they seemed for the smaller and possibly more or less independent units. This has led to a certain amount of delay, but at present organization, even as to details, is going forward at a rapid rate. It is worth noting that the reorganization, in so far as it affects reconstruction work, not only has the coöperation of the regular medical corps of the army, but that surgical advisers, as well as the orthopedic advisers, including such men as Dr. William Mayo, Dr. J. F. Binnie, and Dr. Dean Lewis, and others, understand and are in favor of this reorganization. It is worth noting that this reorganization, for the first time in this or any other country, takes cognizance of the necessity for the supervision of the patient, from the receipt of the injury to discharge, during all of which time the Department of Military Orthopedics is responsible for him, provided he comes within the classification as listed for reconstruction work of this type. This means vast changes in administrative detail, but seems important, and this policy is to be followed, not only in regard to reconstruction along the lines of surgical orthopedics, but in other specialties.

Major Elliott G. Brackett, of Boston, who has been appointed director of this new "Department for Military Orthopedics," estimates that with a million men in the field there should be fourteen units in this country, each with a capacity of 500 beds, capable of being enlarged to 1000 beds, besides extensive accommodation abroad. Aside from the problem of construction and administration of these hospitals, it will be necessary to train physicians to operate them. The little nucleus of highly skilled orthopedists in America will be in charge of the teaching, the men next in rank will follow and the chief numbers are already being recruited from among the doctors of good general surgical experience. Such organization and training of men in reconstruction work, is not only a war measure; in times of peace the training received by this means will be of invaluable service in the correction of accidents and injuries received in industrial lines. State Industrial Accident Boards are already watching the progress of this work with much interest.

Few activities stimulated by the exigencies of war and developed under its harsh incentive, promise more as an opportunity for the science of the medical profession to make itself a yet more effective agent in ministering to the welfare of men.

MEDICAL NOTES.

A MILK-BORNE OUTBREAK OF TYPHOID FEVER ON STATEN ISLAND.—On Saturday, September 1, the New York Health Department's Diagnosis Laboratory reported to the Typhoid Division, four positive Widals from the Borough of Richmond. For that borough, this was an unusual number and at once attracted attention. A cursory investigation showed three of these cases used the milk supplied by the same local dealer. Through the Milk Division of the Bureau of Food and Drugs, information was at once obtained as to the source of this milk, and this done, orders were issued to exclude further shipments of this particular milk, pending further investigation. In a day or two the number of cases recognized and suspected, that came to the notice of the Department of Health, assumed the proportion of an epidemic, and from that time until now (September 18), when the last case was reported, the number of cases reached 72. Of these, at least 65 were traced, directly or indirectly, to the one milk supply already referred to. A thorough investigaton of the source of the milk failed to reveal any clue to the possible origin of the infection. Furthermore, the other points to which the same milk was shipped did not show any increase in the number of cases of typhoid fever. Patient inquiry among all who had possibly come into contact with the milk, finally showed that an individual employed by the firm distributing the milk in Richmond had in his family two active cases of typhoid with which he came into intimate contact. On one or more occasions, this individual acted as the direct conveyor of the infection.

This source of infection has not been operative since September 8th, when the individual concerned was forbidden to engage in any food handling occupation. Inasmuch as the milk supply as such was not at fault, permission to resume the distribution of this was given on September 16th. No new cases belonging to this group have been reported with onsets later than September 9th.

INCREASE IN NUMBER KILLED BY AUTOMOBILES.—The startling fact that the death rate from automobile accidents has more than tripled since 1911, is disclosed by a study of the deaths among the industrial policy-holders of a large insurance company. In 1911, the death rate from this cause was 2.3 per 100,000; in 1916, it had increased to 7.4. During this period the rate for each year was markedly higher than the rate for the year before, and that for 1916 showed an increase of more than 37% over the figure for 1915.

The steadily climbing death rate from automobile accidents among the families of the country's wage-earners is due, very largely, to fatalities among little children. This investigation has developed the fact that of the 2,507 policy-holders who were killed by automobiles during the six years, 1911-1916, no less than 790, or about 32%, were children under 10 years of age, and 1,125, or over 44%, were children under 15 years of age. Unless something is done to check automobile fatalities, the time is approaching when the automobile as an instrument of death among children will become as serious and dreaded a factor as some of the deadly epidemic diseases upon which the attention of health authorities has long been centered. There has been in recent years a marked decrease in the death rate from such diseases as measles, scarlet fever, whooping-cough and diphtheria, but the rate for automobile accidents (surely as preventable a cause of death as any of these) is increasing by leaps and bounds.

Another condition developed by this study is the fact that as far as the industrial population is concerned, more deaths are caused by automobiles than by surface cars, subway trains, elevated trains, bicycles and horse-drawn vehicles combined. Indeed, in 1916 the 756 deaths caused by automobiles approaches very closely the 799 persons insured in the company, killed on steam railroads.

The figures for policy-holders, it must be borne in mind, represent, almost exclusively, pedestrians, rather than those who ride in the machines. This is particularly true of the children. A large part of this mortality, it is evident, is due to reckless driving and to the heedlessness of children to the dangers to which they expose themselves. But whatever be the cause, it is clear from these figures that the automobile is an important agency of death and that its control by the community must be immediate and thorough if improvement is to be made.

RAPID GROWTH OF THE BIRTH REGISTRATION AREA.—Maryland, Virginia, and Kentucky are the latest states to be admitted to the Registration Area for Births by the Director of the Census.

The Registration Area for Births was established in 1915, and was then composed of ten states and the District of Columbia, representing 10 per cent. of the territorial extent of the United States, but containing 31 per cent. of the country's population. For this area, the Bureau of the Census has recently issued its first annual report, entitled "Birth Statistics." As the area grows, the annual reports will deal with the births in a constantly increasing portion of the country and will, therefore, become of constantly increasing interest and value.

The outlook for a very rapid growth of this Registration Area for Births is so good that a word of cheer to the states outside should be given. The need of complete birth registration is recognized now as never before. The age of the soldier must be known, and so a new argument for birth registration comes to the United States. Since war was declared, tests of the completeness of birth registration have been made by special agents of the Census Bureau in Virginia and Kentucky, and both these states secured a rating of over 90 per cent., which represents the degree of completeness required for admission to the area.

Similar tests are now being made in Indiana and New Jersey, and before the year is over will be conducted in North Carolina, Ohio, Utah, and Wisconsin. Several other states are nearly ready to seek admission, and it is by no means a wild prediction that the Birth Registration Area within the next two years will be more than trebled in size, and will contain over two-thirds of the population of the United States.

WAR NOTES.

Ambulance Service in France.—Word has been received from France that the Red Cross Ambulance Service and the Harjes-Norton Service have been taken over by the United States Army. Volunteers for these services will now be obliged to make application to the Surgeon General of the Army. Col. Kean is in charge of the services and, it is reported, plans to enlist the rank and file as privates in the United States service, with the probable intention of offering section leaders the rank of lieutenant. Enlistment, as in other branches of the service, is for the duration of the war.

Appointments.—The appointment of Dr. Alfred G. Coffey of Nashua, N. H., as first lieutenant in the United States Medical Reserve Corps, is announced. Dr. Coffey is a graduate of Tufts Dental School.

Dr. James H. Keith of Brockton, Mass., has received his commission as first lieutenant in the Dental Reserve Corps. He is a graduate of Tufts Dental School.

Enlistments in Medical Corps.—Since Lt.-Col. James F. Hall began the organization of the medical units in the northeastern department about 2700 men have been recruited. These men have all been called from the Reserve Corps into active service. The psychiatric unit, under the direction of Dr. L. Vernon Briggs, is examining the National Guard for nervous and mental disorders and is employing the services of contract surgeons to make the examinations. The medical corps school at Allentown, Pa., has 500 men from the northeastern department under instruction for ambulance service.

Death of Edward Revere Osler.—The death is reported of Edward Revere Osler, only son of Dr. Sir William Osler and Lady Grace Revere Osler, who was formerly of Boston. Lt. Osler was in the Royal Field Artillery, and received wounds, on the western battle front, on August 30, which resulted in his death. He was born in Baltimore, Md., in 1895, and was an undergraduate in Oxford when the war began. In June, 1915, he enlisted in McGill University Medical Corps, where he remained until the spring of 1916, when he was transferred to the artillery. His mother was formerly Miss Grace Linzee Revere of Boston.

American Women's War Hospital.—An analysis of the cases treated at the American Women's War Hospital, South Devon, England, has been published by Major D. Pearce Penhallow, chief surgeon, and covers the period of time from August 20, 1916, to May 29, 1917. During this time one thousand cases were treated. Of this number 650 were surgical cases and 350 medical cases. Of the surgical cases 60.76% were cured, 37.4% were improved, and 1.54% were unimproved. Of the medical cases 34.3% were cured, 62.85% were improved, and 2.28% were unimproved. The average time for discharge was 50 days. The American Women's War Hospital at Paignton, South Devon, is the first and principal expression of the work of the American Women's War Relief Fund which was initiated immediately on the outbreak of war as a token of sympathy with Great Britain in her time of trial. Dr. D. Pearce Penhallow of Boston has been made chief surgeon and, although he has recently been commissioned a major in the Medical Reserve Corps, United States Army, the work of the hospital will continue as formerly.

Children in War Time.—War work for babies, which resulted in lowering the infant death rate in Great Britain, France, Belgium, and Germany, is described by Dr. Grace L. Meigs of the Children's Bureau of the U. S. Department of Labor, in a paper on Infant Welfare Work in War Time, which the bureau has just made available for general distribution.

The special features of the work have varied in the different countries. In England there has been a striking increase in the number of health visitors employed to help and to instruct mothers in the care of their babies and young children. An act providing for Government aid to local agencies had, as it happened, been passed in July, 1914.

"The Local Government Board (the central supervising and administrative body) has taken the stand that in war time, in spite of the general need for economy, no economy should be exercised in this direction. There is evidence that in a good many communities, on account of lack of money and prvate support, the authori-

ties or voluntary agencies have been slow to increase their work or to undertake new work. These difficulties the Local Government Board has largely overcome. It has gone on with the greatest determination towards its acknowledged goal—to have systematic supervision through the work of health visitors for all babies born who need care."

The available information for Germany concerns only the first 18 months of the war. Dr. Meigs refers to the emphasis placed on enabling mothers to care for their own children. A special committee of the Red Cross, for example, was organized in Berlin for the care of mothers and infants. The committee had a fund for needy mothers which it used for those mothers who brought their babies regularly to an infant-welfare station and who took care of them in their own homes.

The outstanding feature of the work in Paris seems to be the increased provision for maternity care; and in Belgium, the establishment of canteens for the feeding of mothers and of young children.

Dr. Meigs speaks of the important part played by the military separation allowances which are granted by foreign Governments to the wives of enlisted men, either, as in Great Britain and Canada, to the wives of all soldiers or, as in France and Germany, to the wives who are in need because the family's wage-earner has been called to the colors. Furthermore, in each of these countries except Belgium, a maternity benefit from Government funds, provided before the war to certain mothers, has now been extended to include either the wives of all enlisted men, or all women who are receiving the military separation allowance.

Dr. Meigs bases, on the experience of these countries, the following practical war-time suggestions for the United States: The chief preventive measure of protecting babies, is to insure their intelligent care and nursing by healthy mothers in their own homes. Nothing should be considered more important in war time than the strengthening and extending of preventive work already established for infant and maternal welfare. The disorganization of such work through the loss of physicians and nurses especially trained for it, should be avoided if possible. Every effort should be made to enlist a large number of candidates for hospital training courses.

HOSPITAL UNIT FROM VIRGINIA.—The first expenditure of the $1,000,000 war relief fund of the Elks' war commission, will go to equip a hospital unit to be sent from the University of Virginia. The total cost will be $60,000. This war relief fund was voted by the Elks' Grand Lodge at its recent Boston session.

TRANSFER OF AMERICAN AMBULANCE HOSPITAL.—Upon the transfer of the American Ambulance Hospital of Paris to the United States Army, the name of the institution was changed to American Red Cross Military Hospital No. 1. Those of its staff who were in the Medical Officers' Reserve Corps were placed on active duty and ordered to continue service, while others have been commissioned and retained. Major George P. Reed of the Medical Corps, U. S. A., is in command.

ORGANIZATION OF RECONSTRUCTION HOSPITALS.—Surgeon-General Gorgas has chosen nineteen cities of the country as sites for the new reconstruction hospitals. The hospitals at Boston, New York, Washington and Chicago will probably be the first built. Others will be built at Philadelphia, Baltimore, Buffalo, Cincinnati, St. Paul, Seattle, San Francisco, Los Angeles, Denver, Kansas City, St. Louis, Memphis, Richmond, Atlanta and New Orleans. Each will have equipment for five hundred beds with provision for doubling this capacity if required.

WAR RELIEF FUNDS.—On September 23 the totals of the principal New England war relief funds reached the following amounts:

French Wounded Fund ...	$253,040.00
Children's Relief Fund ..	218,334.85
Surgical Dressings Fund	123,505.85
French Phthisis Fund ...	68,983.00
Italian Fund	44,492.72

BOSTON AND MASSACHUSETTS.

THE WEEK'S DEATH RATE IN BOSTON.—During the week ended Saturday, Sept. 15, 1917, there were 206 deaths reported, against 216 the corresponding week of last year. The death rate was 13.19. The number of deaths under one was 50, against 50 last year.

The number of cases of communicable diseases was as follows: diphtheria, 52; scarlet fever, 9; measles, 22; typhoid fever, 7; tuberculosis, 56.

Included in the above were the following cases of non-residents: diphtheria, 7; scarlet fever, 3; tuberculosis, 2.

The number of deaths of communicable diseases was as follows: diphtheria, 2; scarlet fever, 1; typhoid fever, 1; tuberculosis, 19.

LONG ISLAND HOSPITAL.—The twentieth annual report of the Long Island Hospital, Boston Harbor, records that the average population for the year was 954, a decrease of 60 from the previous year. Thirty children were born at the hospital, and the possibility of remodeling the old nurses' home into a maternity hospital is being contemplated. The new nurses' home and two new ward buildings have been completed and will be occupied as soon as furnishings can be provided.

MEETING OF INSTRUCTION FOR HEALTH OFFICERS.—A four-days' meeting for instruction of

health officers was held in Boston from September 4 to 7, inclusive. The meeting was held under the auspices of the Committee on Public Health of the Massachusetts Medical Society, with the coöperation of the State Department of Health, the Massachusetts Association of Boards of Health and the United States Public Health Service.

The morning session of the first day was held at Massachusetts Institute of Technology. Edward A. Ingham, C.P.H., gave an illustrated talk on the elements of bacteriology. Surgeon J. W. Schereschewsky of the United States Public Health Service contributed a paper on "Vital Statistics: Their Practical Value to and Use by Health Authorities," and another on "Industrial Hygiene from the Standpoint of the Local Health Authorities."

The afternoon session was held at the laboratory of the Board of Health of Arlington, with Dr. Merrill E. Champion, State District Health Officer, H. W. Hamilton, S.B., Sanitary Research Assistant at M. I. T., and Dr. Ezekiel Pratt, director of the Arlington laboratory, as speakers.

The morning session of the second day was held at Tufts Medical School, and addresses were made by Dr. Champion and Miss Mary Beard of the Instructive District Nursing Association. The afternoon session was held at Massachusetts Institute of Technology, where problems of sewage and garbage disposal and water purification were discussed. The third day was spent at the Boston City Club, and the milk problem was the topic, and at Evans Memorial Hall, where school matters were considered. The last day was spent at the Massachusetts General Hospital and Tufts Medical School.

State Health Insurance.—A hearing on state health insurance was held at the State House, Boston, recently, at which representatives of leading insurance companies appeared before the special Legislative Committee on Social Insurance. Mr. W. G. Curtis, president of the Insurance Economic Association of America, spoke in opposition to state insurance on the ground that such insurance is a tax on the people largely for the benefit of the improvident, and that the saving of "political waste" in Massachusetts would take care of the class of people that social insurance is designed to benefit. The representative of the Metropolitan Insurance Company expressed no objection to social insurance.

Harvard Medical School Open to Women.—The faculty of medicine of Harvard College has arranged that women may be admitted to the Medical School under the same requirements as men. The council of Radcliffe College will confer the degree of doctor of medicine upon such students as are recommended by the faculty of medicine of Harvard University. Applications for information about the registration of women should be addressed to the Dean of Harvard Medical School. Unless a reasonable number of competent students make application, the plan will be abandoned.

NEW ENGLAND NOTES.

New England Tuberculosis Conference.—The coming meeting of the New England Tuberculosis Conference to be held in Rutland, Vermont, on October 4 and 5, should be of peculiar interest as its program bears particularly on the special problems and responsibilities created by the war. The first day will state the problems, medical and social. The second day will suggest programs—national, state and local—for the solution of these problems. The following papers are scheduled:

Thursday morning, General Medical Session, Diagnosis of Tuberculosis in War Times: 1. the Use of the X-Ray, Dr. Horace J. Hawk, Mt. MacGregor, N. Y. 2. The Significance of Râles, Dr. Edward O. Otis, Boston. 3. The Value of Physical Signs, Dr. John B. Hawes, 2d, Boston. 4. What Constitutes a Diagnosis of Tuberculosis Sufficient for Rejection from the Army? Capt. Estes Nichols, U. S. A., Boston.

Thursday afternoon, Some Social and Statistical Aspects of Tuberculosis as a War Problem: 1. Some Facts and Figures in Reference to Tuberculosis as a War Problem, Louis I. Dublin, Ph.D., New York. 2. The Machinery Available and Needed for Handling Tuberculosis in the New England States, Dr. Arthur K. Stone, Boston.

Thursday evening, "Framingham Dinner," an opportunity to hear about the progress of the Community Health and Tuberculosis Demonstration at Framingham, Mass. Speakers, Dr. D. B. Armstrong and others. Public Mass Meeting, General Subject: Tuberculosis in a Nation at War. Addresses, Health Plays, Music and Motion Pictures.

Friday morning, War Programs, State and National: 1. A National War Program, Dr. Charles J. Hatfield, New York. 2. A State War Program, Dr. David R. Lyman, Wallingford, Conn.

Friday afternoon, 12.30 to 5.30, Roundtable Symposium: War Programs for Local Work, a series of five-minute talks, followed by general discussion. Each speaker will be limited to exactly five minutes, and others to three minutes.

The Massachusetts Medical Society.

Hampshire and Franklin Districts.—Dr. John T. Bottomley, Boston, addressed a joint meeting of the Hampshire and Franklin District Societies, at Northampton, September 13. The subject was The Control of Cancer. Dr. Bottomley is a member of the Committee on the Control of Cancer of the Massachusetts Medical Society.

C. T. Cobb, *Secretary.*

NOTES TAKEN AT A PUBLIC HEARING BEFORE THE SPECIAL COMMISSION ON SOCIAL INSURANCE AT THE STATE HOUSE, SEPTEMBER 5, 1917.

CHAIRMAN: We have set aside this morning to hear from the labor interests of the Commonwealth with relation to the problem of social insurance which this commission is studying during the recess. This is really the first public hearing; at other meetings we have invited others in to give their views.

We have set various dates to hold hearings in the month of October. The hearing will probably be held in the city hall in the various cities where the commission will sit.

MR. HENRY STERLING, representing the State Branch of the American Federation of Labor: So far as I can recall, this subject came first before the state association at its annual convention in Springfield in September of last year. At that time a preamble and resolutions were adopted seeming to be favorable to the idea if a suitable measure could be devised. The matter was brought up again at a meeting in January of this year, and the resolution was amended by inserting the word "non-contributory," making it distinct that the state body desired that if any health insurance ever were passed, it should be a non-contributory insurance.

Numerous meetings were held by the legislative committee and the friends of the measure on the one side, and labor men more or less active on the other, and the more we conferred and the more bills suggested, the greater the difficulties seemed, until at last before the legislature came the bill which you are now studying. I think the most useful service I can render is to enumerate the various obstacles, difficulties and objections that we have seen.

The first difficulty is the question of compulsion. It is a different kind of compulsion from anything we have been used to in this country. The bulk of the laws are restrictive in their nature; a citizen shall not do this or that because if he did, it would work injury to his neighbor or the citizens as a whole. Not many order that a man shall do this or that; a few do: a man shall send his children to school, take proper care of his children, clean his sidewalks; these are positive mandates. But whether a law is restrictive or compulsory, back of it all the time is the theory that the thing is ordered for the good of the public, for the good of the Commonwealth, for the good of future generations, or to protect the general public or the neighbors. The particular kind of compulsion set forth in this particular bill introduces an idea entirely different, and the citizen is ordered to do a certain thing for his own good primarily; secondarily, possibly, for the good of his family. He is ordered to insure his health for his own protection, for his own welfare, for his own advancement, or for his own enrichment, or for whatever cause it may be. It orders a man, a grown citizen, to do this or that or the other just for his own good. I wonder if he shouldn't be ordered to take a cold bath every morning, as doctors frequently prescribe. I wonder, if you enter upon that line of legislation, just where you will stop. I don't see just where it would end with any reasonable logic ..... That particular kind of compulsion to many of our people, both within and without the labor organizations, seems to be particularly obnoxious.

There is a second feature that makes it more obnoxious: You have a sharp line drawn; the poor man must insure and the man who gets better wages or a salary or can take care of himself, needn't insure. There is a distinct cleavage; it is class legislation that puts a compulsion upon the poor that it does not put upon the other people.

The third objection is along constitutional lines, —a matter of taxation. If you tax the employer a certain proportion and the employee the remainder, you have again the feature of class legislation; you have a tax levied upon specified classes and not on the rest, for a particular purpose, and it seems to me that taxation of that kind is entirely foreign to anything that has been done or considered or believed to be possible under our present constitution. The idea of taxing the poorest workmen on the assumption that they are not competent to look after the little money they do get, and the state will give it back when they are sick and may need it, may be a good proposition for those that are not considered competent to take care of themselves, but to an American citizen it doesn't appeal as being a desirable thing. Placing that tax upon the workman, collecting it through his employer, and turning it into the general fund would meet, I am sure, with most strong and strenuous objections. Putting it upon the employer would, I judge, meet with the same objections, and the additional objection that, while the workman was receiving something for his money, provided he was sick or disabled, the employer would never receive any direct return whatsoever for the tax levied upon him. So you would have the same thing that has been protested against frequently in the General Court: taking a man's money without any direct return. At the time of the passage of the Workmen's Compensation Act in 1911, on motion of Senator Tinkham, the whole act was referred to the Supreme Court of Massachusetts for its opinion as to its constitutionality, and the reply came back, distinct and clear, that if the act were a compulsory act it would be taking the money of the employer and giving it to somebody else without a direct return to the employer, which would be in effect confiscation. The opinion of the General Court was that the act was voluntary and not compulsory and that it was constitutional. Your health insurance would come under the same category. We all can make a splendid argument that there would be an indirect return through increased efficiency, etc., but the law and the courts insist upon a direct return unless taxes are taken for the general good.

Time and again the matter of giving gratuities has come up before the General Court, such as giving bounties to old soldiers, and the objection each time has been that you cannot give away public money to people except when they have given direct service for it or have performed some distinguished act in the service of the Commonwealth.

And lastly, and what to us perhaps seems the most important, I don't see how it is possible to establish any system of health insurance without instituting thorough, complete, and possibly frequent physical examinations of those who go to work. It has been considered for many years by our people that such examinations would work to

the detriment of the man who was slightly injured or slightly ailing. Worse than that, it would give to an antagonistic employer who desired to blacklist a man who could do a full and proper day's work and discharge him, a legal ground behind which no one could go, thus adding to the many methods which are now in vogue of blacklisting and blackjacking those who make themselves offensive to certain classes of employers by standing primarily for the right, as they see the right, in behalf of themselves and their fellow workers.

I have set forth these objections which careful consideration, conferences and discussions have brought out in the minds of the laboring people in regard to health insurance. I conceive them to be insurmountable, and notwithstanding the glittering possibilities that seem to loom up with the proposition, notwithstanding that Germany with its autocracy has successfully carried on a system of some kind for many years, and notwithstanding that Great Britain adopted the system many years ago, many of us in the labor movement look upon the matter with suspicion, with doubt, with fears that more harm than good will come out of it, and with a desire that the matter shall be more thoroughly worked out than it ever has been yet before it is put upon the laboring people of this Commonwealth.

OSCAR W. CLAPP, representing the Brotherhood of Locomotive Engineers of the Boston and Albany R. R., Division 439; and secretary of a health insurance association which is not a brotherhood affair but takes in any engineer that is on that division: I have nothing to offer for or against the matter other than that it looks to me like a big proposition with a chance for a lot of fraud.

Our association pays $9 a week for 13 weeks after the first week, a $100 death benefit, and flowers for the member or his wife in case of death. The assessment is $1 a month. The by-laws are such now that it is almost impossible for a member to get anything unless it is absolutely square ..... They take care of any member who is disabled, whether from accident or sickness. Have no physical examination. It would therefore be possible for a man who knew he was sick to join and get the benefits. They average one to three deaths a year. As the members grow older, new members come in. Most of the members get more than $25 a week and so would not be affected by the bill. The smallest pay is a few cents less than $25.

The association has not stated their sentiment regarding the bill. Mr. Clapp thought they would be opposed, quite naturally, if they were ordered to submit to an examination to see if they were qualified to hold their jobs.

IGNATIUS MCNULTY, representing the Boston Central Labor Union with over 116 affiliated locals of Greater Boston: The Boston Central Labor Union as a matter of principle believe in health insurance and have no objection to the employer carrying the burden, but they protest against the workingman or woman carrying it any longer. It is not of our choosing, nor is it because of any action of ours, that we are sick according to the law of averages; generally sickness comes to us because of our environment socially and industrially. We have borne it without, in a single instance, receiving a sympathetic voice from the employers' side. Those who are earning less than $25 a week or $100 a month suffer most from sickness. We have had an industrial act to take care of accidents, after a lot of howling from the employers as they did not want to take part of that load. According to the United States investigation, six and a half times more men are rendered unfit for work through sickness than by industrial accidents, and yet the same people argue against it. Health experts admit that there is no question that a great amount of sickness among workmen is due to their industrial environment, and we hold that the industry ought to bear the responsibility for sickness that they do for accidents.

Mr. McNulty emphasized the necessity of protecting women from puerperal fever, stating that the increase in mortality from this cause since 1893 was clearly shown by statistics. He also claimed that industrial environment was the cause of a high mortality among the children who survived the fever. "A child's life under six years of age is determined by his father's wages....."

What is causing the greatest number of deaths among adults from 25 to 45 years of age, the age when a man is most useful to his family and to the state? There are three great causes: tuberculosis, diseases of the heart or organs pertaining to the heart, and blood diseases. A man doesn't die suddenly from tuberculosis; he lasts from two to 36 months, maybe longer. Nor does he die suddenly from arteriosclerosis; he lingers for months or years, and often winds up in an insane asylum. Nor does a man die suddenly of heart disease, though you often hear they do. Tuberculosis is a germ disease and those who are susceptible are those who are ill fed, badly clothed, and badly housed, and work under poor conditions. They lie ill for months and have no protection; their wages are stopped, they are no longer on the payroll. If a brick falls on him he gets two-thirds of his wages, and we feel that if a man is sick by reason of his industrial and social environment he should be taken care of just as well.

Mr. McNulty objected to physical examination, considering it unfair when made by the employer's doctor, who might be prejudiced. His organization objects to contributory health insurance.

REP. FREDERIC J. BROWN: Do I understand that you are in favor of some form of health insurance if the employer pays for it?

Ans.: I don't know whether the employer will have to pay for it or not, but this I do know,—that we are not willing to pay for it, because we are already paying for it ourselves and the employer is not going to shove any additional tax on us when he is more responsible for the sickness than we are ourselves.

REP. B. G. COLLINS: Why isn't the man who employs himself and receives $25 or less entitled to the benefits of such an act just as much as the man who works for wages?

Ans.: I think every one should be protected and that the bill exempts the most deserving people. I agree that all men and women ought to be protected whatever their salary is.

REP. FRED P. GREENWOOD: You say that labor shouldn't bear any more of this burden; do you think it is fair that the employer should be assessed for the indisposition, for instance, of the forty or

fifty thousand men who were arrested for drunkenness in this state last year?

Ans.: I don't think you have any ground for the statement that drink is the cause of disease. There isn't any data of any great value showing that drunkenness causes sickness. (This statement was questioned.)

Mr. McNulty concluded that the state should be the carrier.

MR. EVERETT MORSS: I have gotten a rather definite impression that Mr. Sterling seemed to think that health insurance wasn't much anyhow, and you think you ought to have it, but you agree on one point: that to the workman who gets this health insurance it isn't worth paying for.

Ans.: I object to my carrying the entire load and nobody giving me a word of sympathy. It is simply a refusal on the part of an intelligent working class to carry a load that it is not responsible for. We object to carrying it any longer as our load. If the state must take it up, all right.

MR. WILLIAM R. GRINDOD, Secretary of A. Fixers Union (1300 members) of New Bedford, and of the Amalgamated Textile ..... (14,000–15,000): These two organizations are in favor of this social insurance. From my own observation right inside the textile mills, I know the people absolutely need this insurance.

Mr. Grindod emphasized the fact that women and girls were very frequently overcome at their work on account of the local conditions, which might be greatly improved if adequate inspection were instituted in the mills. He also felt that septic poisoning following an accident was chiefly due to the man's run-down condition. He felt his people would submit to a physical examination, but "it must be a proper medical examination."

Who shall bear the burden? I don't want to say the mill man should bear all the burden, but I think he ought to bear his share; and next, the state, because they benefit the most. I believe if the working people discovered they had to pay they would not be very much interested. Whether interested or not, we must have safeguards to protect the people, if necessary.

REP. FRED B. GREENWOOD: Would the rank and file, the real people that we want to get at, come before our commission and tell the conditions under which they are working? Or would they be instructed? We can get at the employers and ourselves, but we want to get at the workmen themselves and find out what we have to do; we want to get at the conditions of the individuals themselves. Would they come?

Ans.: Yes, but you mustn't expect too much. The employers will attend those meetings, and our people know if they take the stand they will be either bribed or fired, and you can't expect our men and women to do that.

MR. GREENWOOD: Then they are not at liberty to tell the conditions under which they work?

Ans.: They will come but they take an almighty chance when they do.

MR. GREENWOOD: We want to hear from the people who are in it and have enough sand to tell under what conditions they are working; then we shall be in a position to reach the mill men.

MR. LEO K. DONALD, Treasurer of the Quillers and Beamers Union of New Bedford: We are in favor of non-contributory social insurance and do not think that the people who have borne the burden so long should be called upon to pay for any social or health insurance they get.

Mr. Donald stated that when a quiller reached 50 years of age, he was practically "all in"; that the length of a quiller's usefulness was from 12 to 15 years. He considered the sanitary conditions of the mills in New Bedford excellent, and that a man's home conditions depended upon the wages he received, though he admitted in discussion that the wages need not prevent the home being clean.

MR. JAMES H. SIMPSON, representative of the Carders Union of New Bedford (probably 100,000 such workers throughout the state):

Mr. Simpson felt that the carders should be protected by insurance as they work in a very dusty atmosphere, causing tuberculosis. The company's dust removers are inadequate. Without studying the question, he favored non-contributory insurance, but felt it should be compulsory on all employers. His people have no sickness benefit.

REP. JOHN J. KEARNEY, representing the Hotel and Restau. Int. Alliance and League of America:

Mr. Kearney felt very strongly that the state should take care of her citizens, stating that if the large corporations were allowed to base employment on physical examinations, there would still be thousands out of work.

REP. VINCENT BROGNA: I would like to ask Mr. Kearney if he can give me some reason why a private employer ought not to have the privilege of examining the men he is going to hire, in the first instance; why should he not be allowed to hire a number one man and pay him accordingly?

Ans.: You have a perfect right to examine your employees as well as your products, but your employees are not to be examined as products. [Appeared to make a distinction between the rights of a man employing half a dozen men and one employing fifteen thousand. Felt the state should step in and discover why so many were rejected as not physically fit. Felt that the state should be responsible for such work as has been undertaken by the Life Extension Society formed five or six years ago, of which the principal organizer and active society is the Fred T. Ley Contracting Co.]

MR. COLLINS: Do you believe that a sickness-preventive measure, as you might say, instead of health insurance, would accomplish the same end? Do you believe in compulsory physical examination if done by the state rather than by the employer?

Ans.: I believe the state should adopt a social insurance department. We didn't know how many were being injured until the state board took hold of it. There should be a general supervision by the commonwealth of all workers in the commonwealth, investigation of sickness, causes of disease, and care of the sick after they are unable to perform their work.

MR. JOSEPH BEARAK of the United Hebrew Trades (about 12,000) stated that his people were in favor of a non-contributory health insurance.

First, why social insurance? The answer is that we have found a large proportion of the industrial

population of Massachusetts is getting weaker and weaker; more and more every year are taken out of the working class and thrown on the scrap-heap. If these cannot be cured, an old-age pension ought to take care of the man who has worked out his usefulness ..... The worker today cannot, as an economic proposition, pay toward the health insurance because his earning power as compared with his earning capacity (?) today is less than it was ten years ago. Ten years ago probably he would have been in a good position to contribute to health insurance.

Second, it comes out of the worker because the worker is the greater proportion of the population. I don't think the employer ought to run it, but the commonwealth ought to take it.

Mr. Bearak objected to examinations before employment because of a tendency to discrimination. He felt that the man next on the union's list should be hired whether physically fit or not, and stated emphatically that if the prospective employer did not take that man, he would be unable to get any. If an employer refused to take a man known to be an agitator, the union could resort to a strike.

MR. JOHN F. WELD, representing the Massachusetts State Conference of Painters, stated that his 38 local unions did not believe in contributory insurance. The more fortunate members are already covered by insurance and do not feel that they can contribute to anything more at the present time.

MR. WASHBURN: Your members are supporting more or less private benefit associations?

Ans.: Yes.

MR. WASHBURN: Wouldn't they prefer to be compelled to go into a system of insurance whereby they would get a lower premium charge because of the fact that the state and the employer were compelled to come in with them?

Ans.: We are not supporting a private organization; we get all the benefits. We get $10 a week for 40 weeks, and a man can't go to work until the doctor says he is able to. Also have a death benefit of $250. Dues are $1.25 a month. [Mr. Weld felt this was more than they would get from the state. All members have access to the benefit association but it is optional. They have a large surplus and Mr. Weld did not feel that the expense would increase as the members grew older. They also have an unwritten law to help the family of a man over 50 years of age if they think he is in need.]

MR. HARRY J. FITZPATRICK of the Worcester Typographical Union stated they had gone on record as in favor of health insurance. He felt that in the study of the prevention of sickness it would be necessary to go back to childhood environment.

The Worcester Typographical Union has no sickness insurance, but a death benefit of $150. The Worcester Intern. Gr. M., with 75 members, pays $100 to $500 death benefit, for which the members pay one-half of one per cent. of their earnings a month. They also have an old-age pension for those who have been in the union 20 years; after the age of 60, if they wish, they can retire and receive $5 per week, for which they pay one-half of one per cent.

MR. WILLIAM F. MOORE, representing the Taunton Central Labor Union, which includes 45 local unions in Taunton and the Attleboroughs, stated that they were in favor of non-contributory insurance. He felt that if the state took hold of the matter conditions in the mills would be improved. Referred especially to the dust in the jewelry mills, which is not adequately taken care of by the blowers. Lungs are affected after six years.

MR. ARTHUR N. HARRIMAN of the New Bedford Central Labor Union stated that they had "gone on record as in favor of some feature of the non-contributory scheme."

(The conference was to be continued in the afternoon.)

Miscellany.

EXEMPTION OF HOSPITAL INTERNES AND MEDICAL STUDENTS.

THE following regulations governing the discharge of hospital internes and medical students from draft under the selective-draft law of May 18, 1917, have been made by the President:

"First. Hospital internes who are graduates of well-recognized medical schools or medical students in their fourth, third, or second year in any well-recognized medical school, who have not been called by a local board, may enlist in the Enlisted Reserve Corps provided for by section 55 of the national defense act under regulations to be issued by the Surgeon-General, and if they are thereafter called by a local board, they may be discharged on proper claim presented on the ground that they are in the military service of the United States.

"Second. A hospital interne who is a graduate of a well-recognized medical school or a medical student in his fourth, third, or second year in any well-recognized medical school, who has been called by a local board and physically examined and accepted and by or in behalf of whom no claim for exemption or discharge is pending, and who has not been ordered to military duty, may apply to the Surgeon-General of the Army to be ordered to report at once to a local board for military duty and thus be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. With every such request must be inclosed a copy of the order of the local board calling him to report for physical examination (Form 103), affidavit evidence of the status of the applicant as a medical student or interne and an engagement to enlist in the Enlisted Reserve Corps of the Medical Department.

"Upon receipt of such application with the named inclosures, the Surgeon-General will forward the case to the Adjutant-General with his recommendations. Thereupon, the Adjutant-General may issue an order to such interne or

medical student to report to his local board for military duty on a specified date, in person or by mail or telegraph, as seems most desirable. This order may issue regardless of the person's order of liability for military service. From and after the date so specified, such person shall be in the military service of the United States. He shall not be sent by the local board to a mobilization camp, but shall remain awaiting the orders of the Adjutant-General of the Army. The Adjutant-General may forthwith issue an order discharging such person from the military service for the convenience of the Government.

"Three official copies of the discharge order should be sent at once by the Adjutant-General to the local board. Upon receipt of these orders the local board should enter the name of the man discharged on Form 164A, and forward Form 164A, together with two of the certified copies of the order of discharge, to the mobilization camp to which it furnishes men. The authorities at the mobilization camp will make the necessary entries to complete Form 164A, and will thereupon give the local board credit on its net quota for one drafted man."

1. It will be observed that paragraph *First* of the foregoing deals with internes and students who shall *not* have been called by a local board, and provides that they may enlist in the Medical Enlisted Reserve Corps under regulations to be issued by the Surgeon-General, such enlistment entitling them to discharge from draft if thereafter called.

2. An application for enlistment under this paragraph must be forwarded to the Surgeon-General with the affidavit of the applicant, supported by the certificates of his school authorities, showing his present status as interne or student, and particularly how long he has been an interne in the one case, or the year of the medical course that he is pursuing in the other.

3. An interne who has served one year or more as such, will not be enlisted in the Medical Enlisted Reserve Corps under this regulation.

4. An interne who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, at the end of one year of interneship. Applications for commission in the Medical Reserve Corps, from internes who at the expiration of one year's interneship are called for duty as members of the Medical Enlisted Reserve Corps, or from internes whose year of interneship is about to expire, will receive proper consideration.

5. A medical student (undergraduate), who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, upon failing to pass from one class to another, or upon failing to graduate.

6. The *Second* paragraph above quoted deals with internes and students who *shall have been* called for service by a local board under the selective-draft law, and contemplates their discharge from the draft, upon condition that they shall enlist in the Medical Enlisted Reserve Corps.

7. It will be the policy of the Surgeon-General as a rule to recommend discharge from the draft upon the condition indicated, the discharge to be followed by a call to active duty under the enlistment in the Medical Enlisted Reserve Corps at the expiration of a complete year of interneship or upon the failure of the student (undergraduate) to pass to the next higher class or to graduate.

8. Internes and students who are enlisted in the Medical Enlisted Reserve Corps by virtue of these regulations, and are not called into active service under such enlistments, are required to report their status to the Surgeon-General as follows: Internes, at the end of each three months' period, such report to show the total amount of interneship since graduation, and to be countersigned and attested by the Medical Superintendent of the hospital; students, at the end of each semester, such reports to show whether the students qualified for advancement, and to be countersigned by the deans of their respective schools or by subordinate officers representing the deans.

9. In the execution of these regulations, the Department will not recognize interneships in hospitals, sanatoria, or other institutions conducted for profit, or in small private hospitals (50 beds or less), or new interneships established or added since May 18, 1917, to those previously existing, at any hospital, excepting such as may have been newly established and added by reason of a proportional increase in the bed capacity of such hospital; nor will it recognize interneships in the case of any graduate appointed thereto later than August 1, following his graduation.

By order of the Surgeon-General:

ROBERT E. NOBLE,
Lt. Colonel, Medical Corps.

Correspondence.

DIRECT MEDICATION.

New York, Sept. 17, 1917.

Mr. Editor:—

As a very practical and useful addition to your editorial on direct medication, I suggest the use of hypodermic tablets under the tongue. I have found morphine and atropine, employed in this way, most satisfactory. They are rapidly absorbed, avoid the necessity of using the hypodermic syringe, and are available immediately, by any physician at any time. Indeed, I am now convinced that thus employed the hypodermic tablets have a very wide and beneficent field of usefulness, in both civil and military practice. They should be carried and utilized in case of urgent need by every practitioner. I do not claim originality for my suggestion, as it was referred to

by a physician not long since in one of the medical journals, but where precisely, I have forgotten.

I propose to use tincture of strophanthus in this way. I have already done so with much satisfaction by making use of the ordinary Fraser tablet, in an emergency. The almost immediate result was remarkable and satisfactory.

There is no need to swallow water, as the saliva is quite sufficient to dissolve the tablet and without any risk, even to an unconscious patient. No doubt strychnine, digitaline and other alkaloids could be advantageously used when administered under the tongue, and hypodermic use not available and not even desirable. Swallowing these alkaloids and absorption through the stomachal mucous membrane are relatively slow and otherwise occasionally objectionable or impossible.

BEVERLEY ROBINSON, M.D.

RADIUM AND MALIGNANT DISEASE.

Boston, September 18, 1917.

Mr. Editor:—

Apropos of the recent report of the Collis P. Huntington Hospital, published in the JOURNAL, one wonders, and is apt to be led into a state of doubt and uncertainty as to the real value of radium in the treatment of malignant disease, since, on the whole, this report differs so widely from the stated results of others who are working along the same lines. As an illustration of this, one has but to read the report of Barringer (*Jour. A. M. A.*, April 28, 1917. Abstracted by E. H. R. in this journal, Sept. 6, 1917) and another by Holding (*Ann. of Surgery*, June, 1917, same abstractor), particularly the former, who gives an almost glowing account of his work in the treatment of carcinoma of the bladder and prostate. Compare his results with those following treatment of the same structures by the Huntington Hospital officials. Those of us who were present at the address by Dr. Howard Kelley at the Medical Building, less than a year ago, will clearly recall this gentleman's description of the wonderful successes at the hands of himself and his associates in practically all types of malignant disease. Given a fair field for trial, a sufficient amount of radium element, the requisite skill, judgment, experience and knowledge of technique, it is hard for the rank and file of us medical men to understand, and discouraging as well, why there should be so wide a variation in the results of the work in question—a work of the deepest interest and greatest importance to all the world.

JAMES BROWN THORNTON, M.D.

SOCIETY NOTICE.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.—A quarterly meeting of the Essex North District Medical Society was held at the Danvers State Hospital, Hathorne Station, Wednesday, Sept. 26, 1917, upon invitation of Dr. Macdonald Superintendent.

Papers were presented as follows:

"Methods of Procedure in Commitment of Patients to this State Hospital," by Dr. W. A. Bryan.

"Early Signs and Symptoms of Insanity," by Dr. N. G. Prueman.

"Social Service Work. Its value to the Physicians and the Community," by Miss Hannah Curtis.

The next meeting of the Censors will be held at Hotel Bartlett, Haverhill, Thursday, Nov. 8, 1917, at 2 P.M. sharp. Candidates for admission to the Society should bring their diploma.

J. FORREST BURNHAM, M.D., *Secretary.*
T. R. HEALY, M.D., *President.*

UNITED STATES CIVIL SERVICE EXAMINATIONS.

SCIENTIFIC ASSISTANT IN PUBLIC HEALTH WORK. (MALE).

The United States Civil Service Commission announces an open competitive examination for scientific assistant in public health work, for men only. Vacancies in the Public Health Service, in Grade 1 positions at salaries ranging from $1,500 to $2,000 a year, and in Grade 2 positions at salaries ranging from $900 to $1,500 a year, and in positions requiring similar qualifications, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

Certification for filling the higher-salaried positions in either grade will be made from those attaining the highest average percentages in such grade.

The duties of appointees in the first grade will be to assist in making epidemiologic and sanitary surveys to determine the prevalence and causation of disease, to conduct laboratory studies in relation thereto, and to recommend measures to prevent and control outbreaks of disease; and in the second grade, similar duties subject to instruction and direct supervision. The duties in either grade require knowledge of local conditions, particularly of the people of the locality, and ability to meet and deal with these people in such manner as to accomplish the results sought.

Collegiate or university instruction in medicine or biology or sanitary engineering, subsequent to graduation from a four-years' high school course, and at least six months' experience in public health work, under Federal or State authorities, are prerequisites for consideration for Grade 1; and at least graduation from a four-years' high school course and six months' experience in public health work under Federal or State authorities, are prerequisites for consideration for Grade 2.

Statements as to education and experience are accepted subject to verification. Statements as to adaptability for public health work will be obtained by the Commission from the Federal or State health authorities under whom the applicant has served.

If a thesis is submitted under the third subject of Grade 1, it must be on some sanitary subject upon which the applicant has done some special work. The thesis or publications must be accompanied by a statement under oath, taken before an officer authorized to administer oaths for general purposes, in the following language: "I, the undersigned, do solemnly swear (or affirm) that in the preparation of the accompanying material the composition is entirely my own, and that I have given full credit by quotation marks or references to authorities for any quoted matter." The applicant's name and address should be written on the material.

Appointees must be of good character and physique.

Applicants must submit with their applications their photographs taken within two years. Tintypes or proofs will not be accepted.

Applicants must have reached their twenty-first but not their thirty-fifth birthday on the date of the examination.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Post Office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal; Customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. Applications should be proper-

ly executed, including the medical certificate but excluding the county officer's certificate, and must be filed with the Commission at Washington, with the material required of applicants under Grade 1, prior to the hour of closing business on October 2, 1917.

PATHOLOGIST (MALE).

The United States Civil Service Commission announces an open competitive examination for pathologist, for men only, on October 3, 1917, at various points throughout the United States as designated by the Commission. A vacancy in Freedmen's Hospital, Washington, D. C., at $2,000 a year, and future vacancies requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

Applicants must show that they have had at least one year's experience in a pathological laboratory after graduating from a medical college of recognized standing, and that they are able to make all kinds of pathologic examinations and reports thereon.

Statements as to training and experience are accepted subject to verification.

Applicants must have reached their twentieth birthday on the date of examination.

Applicants may be examined at any place at which this examination is held, regardless of their place of residence, and become eligible for appointment to Freedmen's Hospital and other branches of the nonapportioned service; but those desiring to become eligible for appointment in the apportioned service in Washington, D. C., must be examined in the State or Territory in which they reside and have been actually domiciled in such State or Territory for at least one year previous to the examination, and must have the county officer's certificate in the application form executed.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Tintypes or proofs will not be accepted.

This examination is open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D.C. Applications should be properly executed excluding the medical certificate, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

PHYSICIAN (MALE).

The United States Civil Service Commission announces an open competitive examination for physician, for men only. Present and future vacancies in the position of physician in the Indian and Panama Canal services, acting assistant surgeon in the Public Health Service, surgeon in the Coast and Geodetic Survey, and in positions requiring similar qualifications in other branches of the service, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

Entrance salaries in the Indian Service range from $1,000 to $1,200 a year; in the Panama Canal Service, $1,800 a year; in the Public Health Service, from $480 for part time to $1,800 a year for whole time; Coast and Geodetic Survey, $1,020 a year, and an allowance for subsistence at $1 *per diem* while serving on board ship, except in the Philippines, where the allowance for subsistence is $2.50 *per diem*.

Certification for filling vacancies in the Public Health Service will be made of the highest eligibles residing in the vicinity of the place at which the appointee is to be employed, except that upon the request of the Department certification will be made of the highest eligibles on the register for the entire country who have expressed willingness to accept appointment where the vacancy exists.

The applicant must have graduated from a medical school of recognized standing or be a senior student in such an institution and furnish proof of actual graduation within six months from the date of the examination. Additional credit will be given to competitors for physician positions in the Tropics, who have had special training in tropical medicine. Only persons who have had at least two years' experience in the practice of their profession since graduation will be eligible for appointment to the position of acting assistant surgeon in the Public Health Service.

The number of surgeons in the Coast and Geodetic Survey actually employed and under pay at any time is eight. Three of these are employed in Alaska and on the Pacific coast, four in the Philippines, and one on the Atlantic coast and in Porto Rico. Officers serving in the Philippines are usually relieved at the end of two years. All surgeons are attached to vessels; and while their first duty is to conserve the health of the crew, it is expected that they will take part in the work of the survey. Appointments will be confined to those who indicate willingness to accept service in any of the regions named.

Applicants must have reached their twenty-first birthday on the date of making oath to the application, but eligibles who were more than 40 years of age on the day of making oath to the application will not be certified except for filling vacancies in the position of acting assistant surgeon in the Public Health Service, and eligibles who were less than 22 or more than 30 years of age on the day of making oath to the application will not be certified for positions in the Panama Canal Service.

For positions in the Public Health Service and in the Coast and Geodetic Survey the medical certificates in the application form must be executed by an officer of the Public Health Service, except that when this requirement would work a hardship upon an applicant because of his distance from such officer, he may have the certificate executed by any physician. In this event, however, he may be required to pass a physical examination before an officer of the Public Health Service before appointment.

Statements as to training and experience are accepted subject to verification.

Until further notice and on account of the urgent needs of the service, applications will be received at any time. Papers will be rated promptly and certification made as the needs of the service require.

These examinations are open to all male citizens of the United States who meet the requirements.

Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.: the Secretary of the United States Civil Service Board, Post Office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal; Customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. Applications should be properly executed, including the medical certificate but excluding the county officer's certificate, and must be filed with the Commission at Washington, with the material required of applicants under Grade 1, prior to the hour of closing business on October 2, 1917.